United States Department of the Interior
Bureau of Reclamation

Tyler Creek Wasteway Stabilization

Draft Environmental Assessment

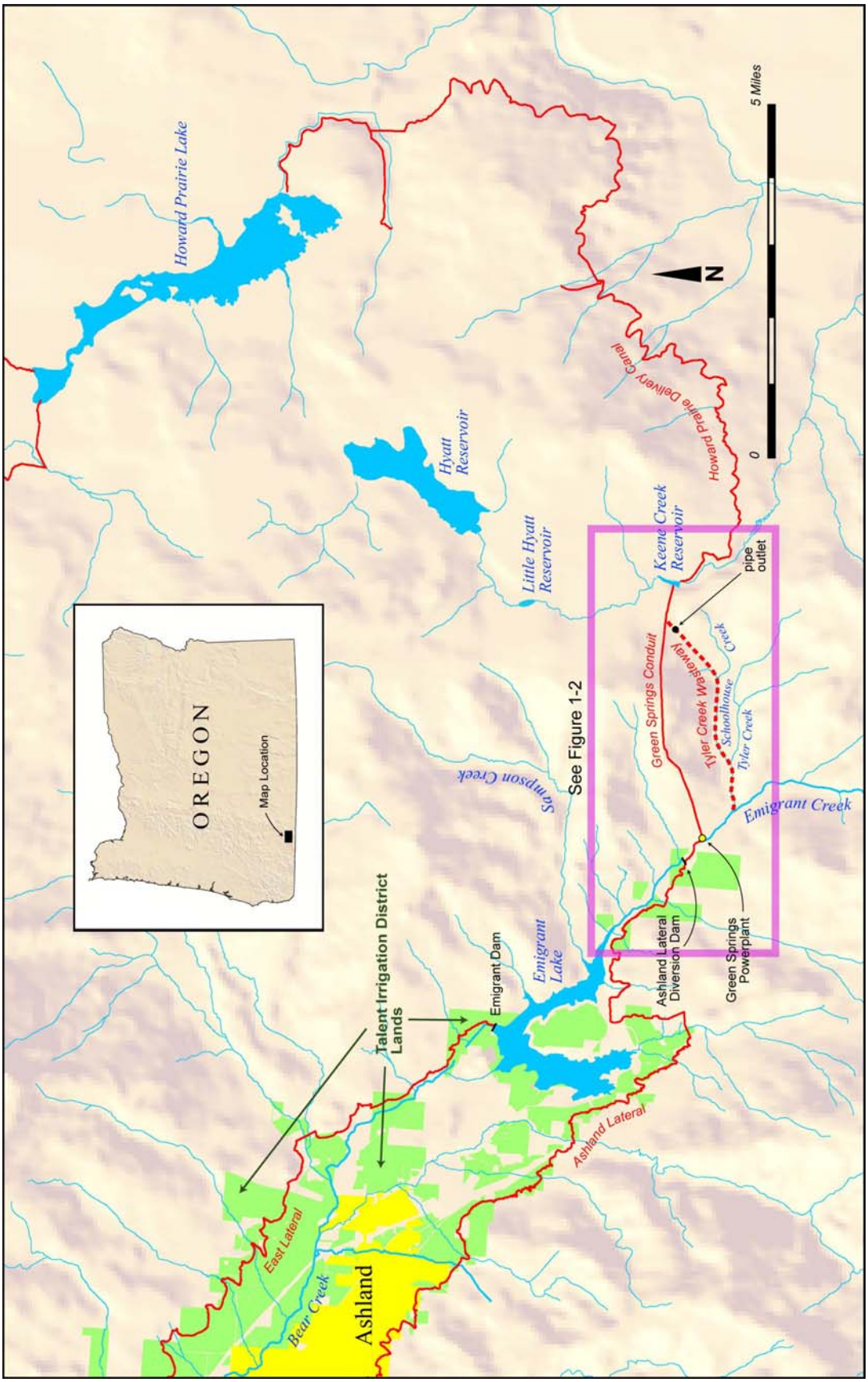
Talent Division Rogue River Basin Project
Oregon

June 30, 2003

Lower Columbia Area Office
Portland, Oregon

MISSION STATEMENT

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.



Frontispiece. Location Map

Glossary

anadromous	fish species that migrate from salt water to fresh water streams and rivers to breed
area of considerable erosion	a single section of Tyler Creek wasteway with considerable bank sloughing with loss of trees and vegetation
areas beyond the scope of this EA	all areas north, east, south, and west of the wasteway's natural channel (as defined below), including those reaches upstream from the pipe outlet and downstream from where Tyler Creek enters Emigrant Creek
bioengineering	using live vegetation, logs, rock, and dead brush to build engineered stabilizing structures that cause minimal environmental disturbance
BLM	U.S. Department of the Interior, Bureau of Land Management
BP	before present time
breccia	rock consisting of sharp fragments imbedded in a fine matrix such as sand or clay
carrion	dead and putrefying flesh
cfs	cubic feet per second; the standard used in Western irrigation practice to measure rate of flow
cm	centimeter
Corps	U.S. Army Corps of Engineers
cribwall	a bin-type retaining wall consisting of interlocking wood members used to stabilize slopes
CWA	Clean Water Act
debitage	debris resulting from stone tool manufacture
EA	environmental assessment — documents: 1) environmental effects of a proposed Federal action, 2) mitigation efforts that would either correct adverse effects or enhance the environment
easement	the right, privilege, or interest obtained through legal conveyance to construct, maintain, and operate facilities within a specified tract of land owned by another party

EIS	environmental impact statement — documents significant environmental effects of a proposed Federal action for which Federal mitigation may not correct
endemic	restricted to or peculiar to a locality, specific region, or area
environmental justice	identification of a proposed Federal Action's disproportionately high and adverse human health or environmental effects on minority populations and low-income populations (as defined by Presidential Executive Order 12898 in 1994)
EO	Presidential Executive Order
ephemeral	lasting a very short time
ESA	Endangered Species Act
fascine	a long bundle of sticks bound together and used to stabilize slopes
FISRWG	Federal Interagency Stream Restoration Working Group (made up of 15 Federal agencies)
flowage easements	the right or easement to overflow, submerge, or flood certain lands owned by another party
FOG	Friends of the Greensprings
FONSI	Finding of No Significant Impact
gabion	a specially designed box container made of corrosion-resistant wire and filled with coarse rock aggregate to stabilize slopes
geology	the science that deals with the physical history of the earth, the rocks of which it is composed, and the physical changes the earth has undergone or is undergoing
geomorphic	pertaining to the form or general configuration of the earth's surface and the changes that take place in the evolution of landforms
geotechnology	scientific methods and engineering techniques dealing with the enhancement of and use of natural resources
historic properties	prehistoric and historic archeological sites, buildings, and historically important places eligible for inclusion in the National Register of Historic Places; places of special heritage value to

	contemporary communities because of their association with cultural practices or beliefs important in maintaining the cultural identity of that community
HRA	Heritage Research Associates, Inc.
IF	isolated find
Indian sacred sites	any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion (as defined by Executive Order 13007)
ITA	Indian trust assets — legal interests in property held in trust by the United States for Indian tribes or individuals; examples are lands, minerals, hunting and fishing rights, and water rights
KSE	Klamath-Siskiyou Ecoregion
mollusk	an invertebrate characterized by a soft nonsegmented body lacking a spinal column and commonly protected by a hard shell
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NOAA Fisheries	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
No Action	the most likely future without the proposed Federal action
NTU	nephelometric turbidity units
ODEQ	Oregon Department of Environmental Quality
ODSL	Oregon Division of State Lands
ONHP	Oregon Natural Heritage Program
pH	a measure of acidity representing the percentage of free hydrogen ions
powerplant	Green Springs Powerplant
project	Rogue River Basin Project, Oregon

proposed action	to upgrade access to Tyler Creek wasteway and stabilize the wasteway channel
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
released water	water released through Rogue River Basin Project's Talent Division facilities
revegetation	the manual planting of native plants on cut banks or landslide areas to provide vegetative cover and stabilize those areas
revetment	an embankment or wall of rocks, trees, cut brush, earth, or sandbags constructed to restrain material from being transported away
right-of-way	an easement that authorizes the use of the land of another party for specified purposes, such as a road or wasteway
riparian vegetation	the trees, shrubs, and plants growing in the moist habitat adjacent to any stream
RVCOG	Rogue Valley Council of Governments
semelparous	fish species that spawn only once and then die
SHPO	Oregon State Historic Preservation Office
SONCC ESU	Southern Oregon/Northern California Coasts coho salmon evolutionarily significant unit
standard engineering	engineering techniques that include backfill, concrete linings, armored banks, concrete revetments, rock riprap, and include concrete and/or metal components
TID	Talent Irrigation District
TMDL	total maximum daily load
USFWS	U.S. Department of the Interior, Fish and Wildlife Service
wasteway	Tyler Creek wasteway; the natural channel used to convey water between the wasteway's pipe outlet and the point where Tyler Creek enters Emigrant Creek

work area	the areas limited to: 1) the natural channel used to convey water between the wasteway's pipe outlet and where Tyler Creek enters Emigrant Creek, and 2) the access road right-of-way between Tyler Creek Road and the wasteway

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Chapter 1 — Purposes of and Need for Action

This chapter provides background information and describes the purposes of and need for Bureau of Reclamation (Reclamation) action regarding Tyler Creek wasteway (wasteway), a component of Reclamation's Talent Division of Rogue River Basin Project in Jackson County, Oregon (see the frontispiece). It identifies the proposed action, the work area, designs examined prior to building the wasteway, construction activities, permit requirements, access, and the decision process Reclamation will follow at the conclusion of the National Environmental Policy Act (NEPA) process. It also summarizes public issues and concerns gathered to date relative to the wasteway. (The name "Tyler Creek wasteway" is a misnomer in that the wasteway is located on Schoolhouse Creek, a tributary of Tyler Creek.).

Purposes of and Need for Action

The need for action is to stabilize localized areas of the wasteway channel for continued wasteway use.

The purposes of action are to:

- **correct existing localized streambank damage in the wasteway**
- **minimize or prevent future streambank erosion and degradation in the wasteway**
- **provide for future maintenance of the wasteway.**

Reclamation's responsibilities include maintaining its facilities, meeting water delivery obligations, and evaluating environmental effects in accordance with NEPA. Routine powerplant maintenance, which may require the shut down of Green Springs Powerplant's single turbine, is typically conducted outside the irrigation season. When unforeseen powerplant equipment malfunctions occur during irrigation season, Reclamation has one alternate means of transferring water from Keene Creek Reservoir to Ashland Lateral and Emigrant Lake to meet water delivery obligations – that is to bypass the powerplant by diverting flows through Tyler Creek wasteway. Because malfunctions happen randomly, Reclamation typically is unable to plan the timing or duration of wasteway use.

Reclamation has occasionally diverted water through the wasteway (about five times) since constructing the powerplant in 1960. A separate report, a work in progress, describing the facilities and operation of the Rogue River Basin Project addresses operational aspects of the entire project; therefore, operations of Tyler Creek wasteway and Green Springs Powerplant are not addressed in this environmental assessment (EA).

The duration of wasteway use is dependent upon how long it takes to fix the powerplant and get it back on line. Wasteway use is normally restricted to short durations. However in 1993, a powerplant generator maintenance procedure started prior to irrigation season became problematic. Reclamation notified interested parties that the powerplant would be out of service for extensive repairs and maintenance and that the wasteway would convey irrigation deliveries throughout the entire 1993 irrigation season. This led to the longest continual use of the wasteway. The water volume diverted through the wasteway was limited to meeting downstream water delivery obligations. Even so, the extended use of the wasteway eroded the channel, exceeded its capacity in some locations, and damaged property outside of Reclamation's rights-of-way. One particular area of bank sloughing with loss of trees and vegetation is referred to throughout this EA as the "area of considerable erosion" and is shown in figures 1-1, 1-2, and 1-4. Several wasteway areas within and outside of Reclamation's rights-of-way require attention to minimize or prevent further bank degradation.

Figure 1-1. A portion of the area of considerable erosion

Proposed Action and Scope of Work

Reclamation is **proposing to upgrade access to the wasteway and stabilize localized areas of the wasteway channel. The wasteway is defined as the natural channel used to convey water between the wasteway's pipe outlet and the point where Tyler Creek enters Emigrant Creek. The proposed work area includes the wasteway and the access road right-of-way between Tyler Creek Road and the wasteway.**

The range of public comments suggests a desire to expand the scope of the project beyond the proposed work area. The wasteway channel carries intermittent flow during periods of snowpack runoff and precipitation. Once the flow enters Tyler Creek, other factors beyond Reclamation's control affect natural resources which occur in or use the creek channel. Increased population and development in the Tyler Creek drainage have somewhat increased wasteway flow. Therefore, watershed or basin-wide areas, issues, and studies outside the proposed work area are beyond the scope of this EA. These areas comprise locations north, east, south, and west of the wasteway's natural channel, including those reaches upstream from the pipe outlet and downstream from the point

where Tyler Creek enters Emigrant Creek. Likewise, issues that extend beyond the purposes of and need for action are considered watershed issues not specific to stabilizing the wasteway.

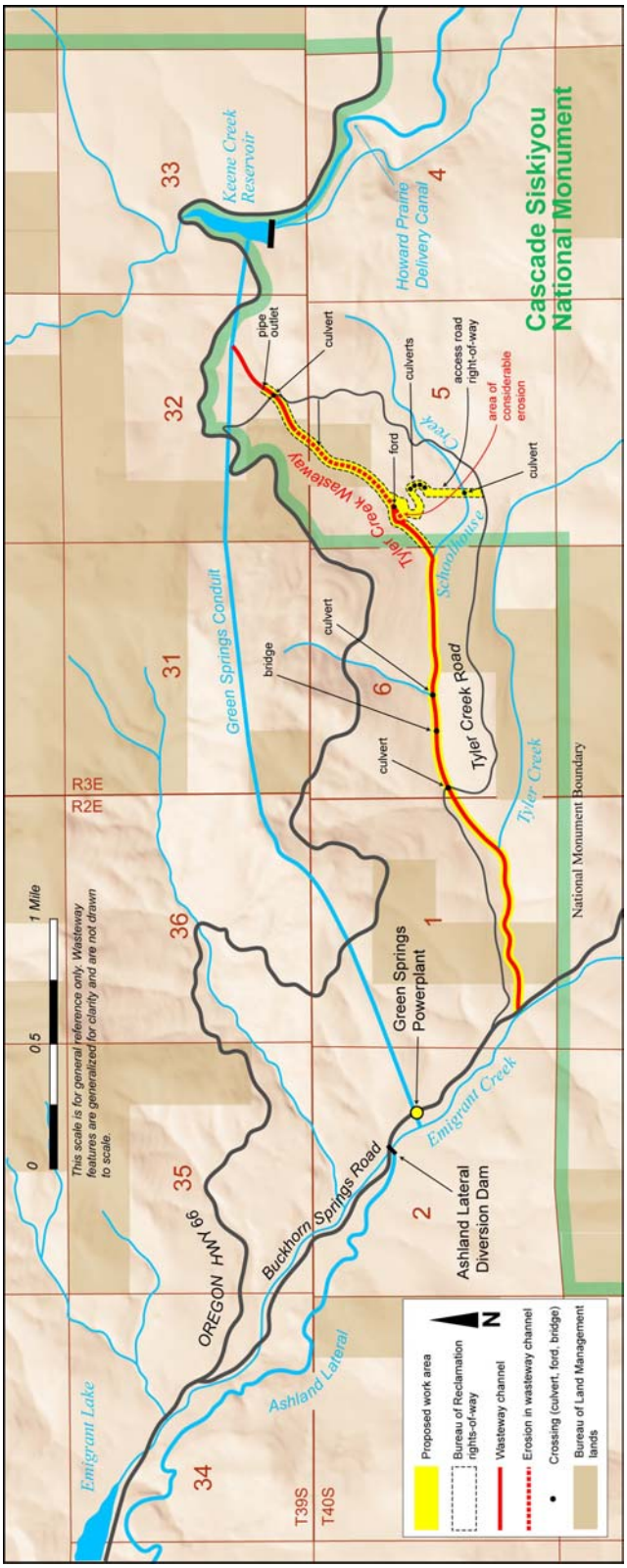

Figure 1-2. Proposed work area

Background

Authority

Reclamation rehabilitated existing Medford and Rogue River Valley Irrigation District facilities under the Rehabilitation and Betterment Act of October 7, 1949, (63 Stat. 724), as amended (68 Stat. 752). The Act of August 20, 1954, (Ch. 775, 68 Stat. 752) authorized Reclamation to construct, operate, and maintain the Talent Division of the Rogue River Basin Project according to Reclamation laws.

Rogue River Basin Project Description

Rogue River Basin Project's Talent Division collects, stores, conveys, and distributes water from high elevation reservoirs to three water districts in the Rogue River valley. The project is also authorized to provide downstream flood control. Talent Irrigation District (TID) diverts storage from Hyatt Reservoir and Howard Prairie Lake to Keene Creek Reservoir, which reregulates stored water for Green Springs Powerplant. The powerplant discharges water into Emigrant Creek for diversion into Ashland Lateral or for storage in Emigrant Lake until TID releases it for irrigation. To bypass the powerplant, a bypass valve on the power conduit diverts water released from Keene Creek Reservoir into a piped section of the wasteway that empties into an open natural channel and flows into Schoolhouse Creek, Tyler Creek, and Emigrant Creek. Using the wasteway provides no benefit for power production.

Water users hold contracts with Reclamation for rights to delivery of water via the wasteway during times when Green Springs Powerplant is out of service for maintenance or repairs.

Early Powerplant/Wasteway Designs

Reclamation has examined various powerplant and wasteway design options prior to the 1959-1960 construction and in more recent years. All options, except those for the existing powerplant and wasteway, were eliminated from further consideration because they were either technically, economically, or environmentally unacceptable. The eliminated designs include:

- a power conduit layout with an open power canal and a traditional wasteway structure at the location where the canal would enter the penstock; this design included an alternate natural drainage channel, such as Samson Creek
- a two unit powerhouse that could bypass one unit during maintenance and discharge water through the other unit into Emigrant Creek
- a bypass valve and pipe at Green Springs Powerplant that would discharge into Emigrant Creek
- a buried pipeline along the entire length of the existing wasteway alignment

After much analysis on design options, Reclamation found the existing Tyler Creek wasteway to be the most technically, economically, and environmentally acceptable option.

Wasteway Construction and Modification

Reclamation constructed the piped section of Tyler Creek wasteway in 1959, modified the channel at the pipe outlet during construction of the powerplant in 1960, and made additional modifications in winter 1992 and spring 1993 to stabilize the upper-most section of the wasteway and the pipe outlet discharge pool. At the landowner's request to avoid further property damage, Reclamation constructed a berm in 1993 along a section of the wasteway directing flow away from the area of considerable erosion (figure 1-3).

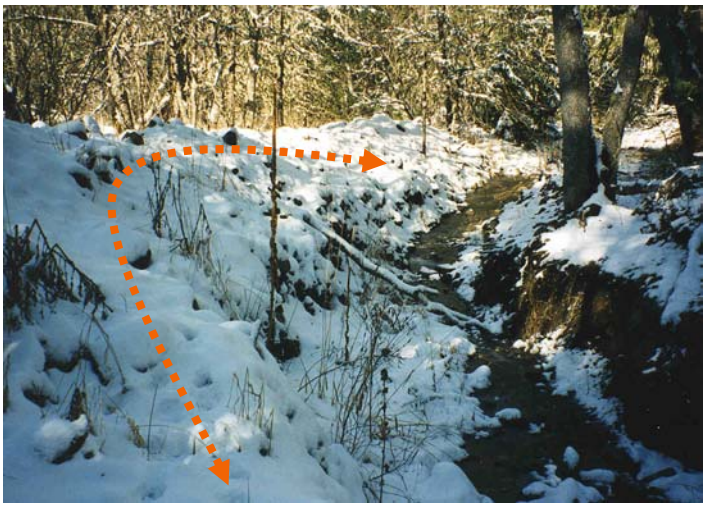

Figure 1-3. Berm prevents wasteway flow from entering the area of considerable erosion and directs it into another natural channel.

Construction Permits

Oregon Department of Environmental Quality (ODEQ), Oregon Division of State Lands (ODSL), and U.S. Army Corps of Engineers (Corps) have specific and different regulatory roles designed to protect waters within Oregon. Regulations are designed to protect navigable waters, ensure wise and beneficial water use, maintain and enhance water quality, protect fish and wildlife habitat and recreation resources, and protect the public interest. The goals of these regulatory roles are to protect the biological, chemical, and physical integrity of Oregon's waters. Wetlands are given special regulatory emphasis because of their value.

Regulated activities in Oregon's waters that may require a permit include but are not limited to:

- excavating and dredging
- changing, realigning, or relocating channels
- placing fill, riprap, or similar material
- stabilizing banks or shores including jetties and revetments
- installing culverts, bridges, or roadways.

To accomplish the purposes of action, Reclamation would obtain Clean Water Act (CWA) and appropriate State permits prior to construction activities as required by ODEQ (Section 402 permit and Section 401 certification) and ODSL (removal/fill permit) and the Corps (Section 404 permit).

Flowage Easements, Rights-of-Way, and Wasteway Access

Reclamation can run water through natural waterways without obtaining rights-of-way if the flow is within the carrying capacity of the channel. Flowage easements are needed where flow may exceed the natural channel and cause property damage. In the early 1960s during the planning and construction phases of Tyler Creek wasteway, drainage areas of existing creeks and their ability to handle released flows provided the basis for determining the location and extent of these flowage easements. Reclamation and TID obtained flowage easements from the pipe outlet to the west boundary of the Garfas property (west boundary of Section 5, T40S, R3E, W.M.). See figure 1-4. The creek channel downstream from the Garfas property to the confluence of Tyler Creek with Emigrant Creek was assumed to be sufficient to carry released flows; therefore, flowage easements for this reach were not obtained. Use of the wasteway during the 1993 irrigation season revealed that the channel was not capable of carrying long-term flows without eroding the channel banks.

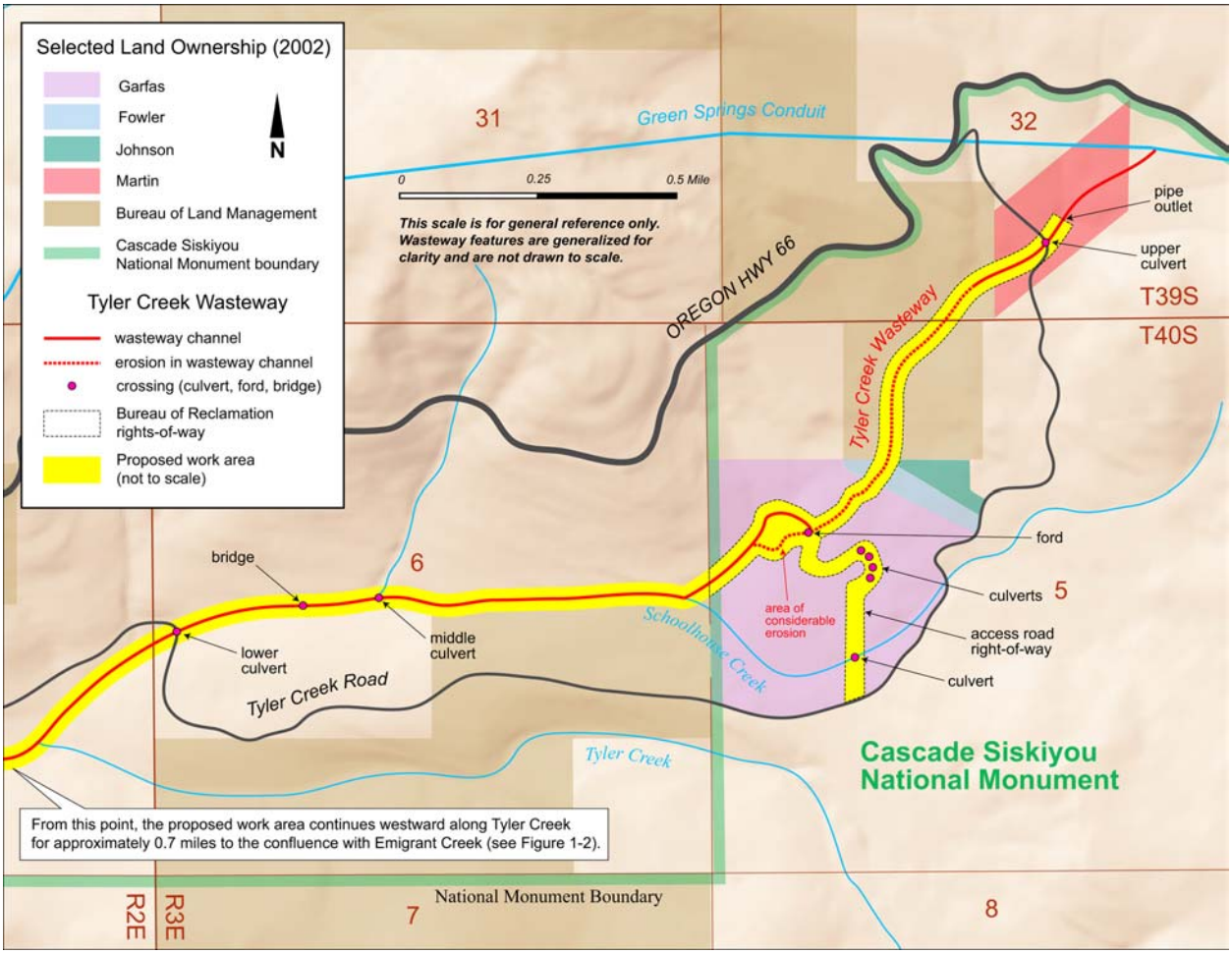

Figure 1-4. Approximate 2002 land ownership and Reclamation rights-of-way

Reclamation and TID employees, in the past, could only legally access the wasteway by staying within the 100-foot-wide flowage easement from the pipe outlet to the west boundary of the Garfas property. It was difficult to get equipment into the wasteway for maintenance. Reclamation, therefore, acquired a 60-foot-wide access easement and right-of-way across approximately a 1,700-foot length of private property for easier wasteway access (figure 1-4).

Reclamation may need to acquire additional flowage easements and rights-of-way in areas needing stabilization. In the absence of agreements between Reclamation and landowners, Reclamation has the option of invoking the Canal Act, if applicable. The Canal Act of August 30, 1890, (26 Stat. 391) authorizes Reclamation to acquire lands with compensation, take possession, and exercise certain rights-of-way reserved to the United States for irrigation works and reclamation of arid lands. The 1890 Act applies to land patents issued after August 30, 1890, west of the 100th meridian*. Similar reservations for such purposes may also apply to privately owned lands through water-right applications, water users' association stock subscription contracts, State legislation, and the Federal Power Act of June 10, 1920, (41 Stat. 1063).

A Decision to Make

As part of the NEPA process, Reclamation considers public comments prior to **deciding which alternative to implement**. Reclamation will complete this EA on Tyler Creek wasteway stabilization and then determine whether a Finding of No Significant Impact (FONSI) is appropriate. If a FONSI is appropriate, Reclamation will make a decision on whether to implement the preferred alternative along with the environmental commitments outlined in the EA/FONSI.

If the proposed action results in significant environmental effects, a FONSI would be inappropriate. Reclamation would then prepare an Environmental Impact Statement (EIS) followed by a Record of Decision on whether or not to implement one of the identified alternatives.

Scoping Process and Issues Identified

As required by NEPA, Reclamation developed a preliminary range of alternatives to stabilize the wasteway taking into consideration the existing wasteway channel degradation, the steep terrain, and the goal to maintain the environmental integrity of the channel. An ongoing and open public and agency scoping process identified the issues and concerns to be addressed in this EA. Reclamation diligently gathered information through public outreach efforts, talking with stakeholders, and ongoing contacts with local, State, and Federal agencies. An initial scoping letter, in April 2001, requested public assistance in identifying environmental impacts and concerns or suggestions on the alternatives. These alternatives were discussed at a May 21, 2001, tour of the wasteway channel attended by Bureau of Land Management (BLM), landowners, Friends of the Greensprings (FOG), and two private consultants. The participants agreed that a natural stream should be maintained rather than building a man-made canal. They also agreed that bioengineering techniques using native vegetation would offer the best solution.

* The 100th meridian is a longitudinal line representing the boundary between the non-irrigated, moist east and the arid, irrigation-dependent west. This line runs through North and South Dakota, Nebraska, Kansas, Oklahoma, and Texas.

These preliminary alternatives were then presented at a public workshop on December 6, 2001, in Ashland. Fourteen stakeholders attended. The workshop offered another forum for public input on the alternatives. Those comments that fell within the scope of stabilizing the wasteway and that were not already incorporated into the alternatives were given consideration. Public comments and preferences identified throughout the scoping process helped to refine the alternatives as evaluated in this EA.

Comments generated from the review of this EA that are considered to be technically, economically, and environmentally viable will also be given consideration prior to selecting an alternative.

The issues and concerns raised throughout the scoping process and prior to release of this EA are categorized and summarized as follows.

Land Ownership and Access

Land owners are concerned about damage to their property caused by Reclamation's use of the wasteway to deliver water when the powerplant is out of service. They expect Reclamation to repair their land. They want Reclamation to obtain easements through their property. They want to be involved in how their land is repaired. They are concerned about losing their right to privacy.

Geologic Features

The public is concerned with the unstable soils present in the wasteway, the loss of those soils, the long-term degradation of the landscape, and the effect erosion has on downstream resources. There is concern that using the wasteway could reactivate an ancient landslide. The public is concerned with the volume of water and the duration of the flow. They suggested a channel survey and design criteria that Reclamation incorporated into the preferred alternative. They offered suggestions on detailed studies and developing an alternative bypass, all of which are outside the purposes of and need for action.

Water

The public is concerned about how using the wasteway affects downstream water quality.

Vegetation

The public wants the natural vegetated state of the channel returned and maintained with native plantings, increased riparian shade, and protection of wetlands.

Fish, Wildlife, and Aquatic Resources

The public is concerned about what sedimentation does to the downstream aquatic environment and species. They requested analysis for special status species.

Social Aspects

Public concerns include quality of human life and health and safety. They are concerned that the erosion is destroying the value of their investments and causing an unsightly landscape. They are concerned about the possibility of reactivating a major landslide causing the loss of their property, homes, and human life. Their peace of mind is impaired.

Alternatives and Study Types

The public wants thorough analysis of current conditions and the impacts using the best science available to develop a broad range of alternatives.

Management and Infrastructure

Concerns range from wanting to see first-hand and discuss the wasteway damage to lack of trust in Reclamation's actions to offering assistance.

Issues Outside the Purposes of and Need for Action

Several of the public comments and requests pertain to issues unrelated to stabilizing the wasteway. Reclamation acknowledges and has documented these issues, but considers them as being beyond the scope of this EA. Specific issues and concerns are:

- Engineering, geomorphic, geologic, and geotechnical studies
- Cost, benefits, and cumulative effects on whole river system
- Dependable irrigation water delivery
- Drinking water in City of Rogue River
- Permanently abandon the wasteway
- Return the stabilized wasteway to a natural channel
- Observe other streams not affected by Reclamation releases
- Stream profiles and cross sections on tributaries
- Stabilize tributary channels and swales
- Extend the study area from the outlet pipe to Buckhorn Springs Road
- Alternative way to bypass powerplant
- Significant offsite impacts beyond the scope of the proposed action
- Long-term impact and cost analysis of wasteway versus an alternate bypass
- Revisit Samson Creek as wasteway channel

- Cleaning sedimentation from sprinkler systems
- Deliver irrigation water without degraded water quality or social, economic, or environmental damage

Chapter 2 — Alternatives

Chapter 2 – Alternatives

The proposed action is to upgrade access to the wasteway and stabilize localized areas of the wasteway channel. This chapter presents a reasonable range of alternatives developed after consideration of public input:

1) No Action
2) Combining Bioengineering with Standard Engineering Techniques
3) Using Only Bioengineering Techniques
4) Using Only Standard Engineering Techniques.

NEPA typically defines "No Action" as the most likely future without the proposed Federal action. The No Action alternative serves two purposes:

- It identifies expected future environmental conditions without taking measures to stabilize the wasteway or upgrade access.
- It is the basis (baseline condition) by which all other alternatives are compared.

The three action alternatives (2, 3, and 4) offer different methods of accomplishing the purposes of and need for the action. The alternatives are described in general terms, rather than site specific, due to the dynamic nature of the problem and the expected long-term efforts to stabilize the channel. This chapter also identifies alternatives examined but eliminated from further consideration.

Alternatives Considered But Eliminated From Further Consideration

A couple of alternatives discussed early in the evaluation process were eliminated from further analysis as they were shown to be technically, economically, or environmentally unacceptable for stabilizing the wasteway. These alternatives are:

- stabilizing the entire length of the wasteway
- constructing energy dissipaters and settlement ponds.

Alternative 1 – No Action

The No Action alternative leaves the wasteway in its current condition with unstable banks and no road access for maintenance equipment. This alternative does not address existing environmental problems associated with use of the wasteway. No work would occur under this alternative to repair or enhance bank stability. Future use of the wasteway would be expected infrequently, based on only about five occurrences of use in the 43-year history of the wasteway. Should use of the wasteway become necessary to meet water delivery obligations, Reclamation would keep the duration of use as short as possible while allowing for sufficient

repairs of Green Spring Powerplant. Water deliveries would be kept to what was necessary to meet those water delivery obligations.

Alternative 2 (Preferred Alternative) – Bioengineering Combined With Standard Engineering

The preferred alternative offers the most well-rounded approach to stabilizing the wasteway. It effectively addresses existing environmental problems associated with past project wasteway use and applies proactive, environmentally friendly measures to stabilize the wasteway. **The preferred alternative is to:**

- **stabilize localized areas of the wasteway banks and immediate upslope areas using a combination of bioengineering and standard engineering techniques,**
- **construct an access road to the wasteway within existing Reclamation right-of-way, and**
- **acquire new rights-of-way and flowage easement access as needed in the future.**

The preferred alternative would be approximately 80 percent bioengineering techniques and 20 percent standard engineering techniques. Bioengineering techniques would be incorporated as much as possible except where a standard engineering method would be considerably more effective and reliable. Access to specific areas of the wasteway affects which type of engineering techniques could be implemented. Stabilization structures, including the types of vegetation, would be designed specifically for site characteristics and conditions based on channel and bank morphology, access, and consultation with the landowner and/or managing agency. The process of stabilizing the wasteway would continue for several years.

Surveying the Wasteway Channel

Reclamation surveyed and developed slope, gradient, and cross section information for the wasteway channel from the pipe outlet to the west edge of the Garfas property (figure 1-4). The wasteway channel centerline survey completed from the west edge of the Garfas property downstream to where Tyler Creek enters Emigrant Creek would be used to identify where rights-of-way would be acquired. Slope, gradient, and cross section data would be determined. These data would assist in negotiating with landowners on individual parcels to determine the meets and bounds description and distance off centerline for rights-of-way to be acquired. These data would identify the physical location of existing landownership, specific areas needing standard engineering techniques that could handle higher flow velocities, needed easements and rights-of-way for access to and along the wasteway channel, and would speed the right-of-way acquisition process. More in-depth surveys of individual sites needing standard engineering techniques would assist engineers in designing appropriate structures and determining the quantity and type of appropriate construction materials. These data would also locate known archeological sites which would be excluded from Reclamation's right-of-way acquisitions.

Acquiring Additional Flowage Easements and Rights-of-Way

Reclamation would be required to obtain additional rights-of-way prior to performing any bank stabilization in areas outside the existing acquired rights-of-way. Reclamation policies and authorities would direct acquisition of any additional flowage easements or rights-of-way and use of the 1890 Canal Act rights-of-way authority (where those exist), if the need develops. The *Flowage Easements, Rights-of-Way, and Wasteway Access* section of chapter 1 explains this Act.

Proposed Work Sequence

The priorities in the first year would be to:

- construct nonexistent sections of the access road
- begin stabilizing banks damaged by previous wasteway use and still actively eroding
- obtain rights-of-way to the private bridge and culverts along Schoolhouse Creek
- protect the private bridge
- repair the private culvert site.

Reclamation would then assess and repair wasteway areas needing preventative stabilization so the wasteway could perform without causing damage. Further stabilization would occur as needed over a period of several years depending upon the severity of existing erosion and the potential for future degradation with released flows. Each following year of the stabilization process would begin with examination and repairs, as needed, of the previous year's efforts. Additional sites would be stabilized each year until the purposes of action are achieved.

The preferred alternative would stabilize the realigned wasteway channel that bypasses the area of considerable erosion. Released water no longer flows through the area of considerable erosion, and it is beginning to stabilize naturally with recovery of native vegetation. Reclamation may do some revegetation in this area, but environmental disturbance would be minimal. Additional stabilizing structures could be constructed downstream from the current flowage easement with cooperation of local landowners and acquisition of rights-of-way.

Bioengineering Techniques

The overall concept of bioengineering uses mostly natural materials to repair slope failures and strengthen banks to sustain released flows without further deterioration. Sites needing stabilization would be evaluated in consultation with landowners and managing agencies to determine appropriate vegetation species. Vegetation and seed/plant mixture selection would depend upon local availability, ease of establishment, competitiveness with invasive weed species, compatibility within the mixture, and desired streambank protection attributes. Additional native grasses (e.g. Bromus, Festuca, Stipa, and the wheatgrass/ryegrass complex) would likely augment existing grass species to maximize vegetation establishment, site stabilization, and desirable habitat values. (Reclamation 2001)

Designs for the stabilizing infrastructures would include supporting crib structures, geotextile cover, revegetation, root wad systems, gabion fill material, rocks, and possibly small amounts of concrete and/or some metal. Structures would be constructed from trees within the adjacent mixed conifer stand (pine, spruce, fir) and transplanting of live woody cuttings from local native shrubs (e.g., Salix, Alnus, Symphoricarpos, etc.). Use of this local native vegetation would limit the introduction of noxious weeds. Native vegetation would develop root masses adding stability to the banks and upslope, and after a growth period, would cover any infrastructure components. Specific bioengineering techniques that could be used are:

- Live cribwalls (figure 2-2) or vegetated gabions (figure 2-3) to stabilize near vertical banks (figure 2-1)
- Tree revetments (figure 2-5), live fascines (figure 2-6), live stakes (figure 2-7), or brush mattresses (figure 2-8) to stabilize other sloughing banks (figure 2-4).

Live cribwalls and vegetated gabions would add bulk to structures and would be installed along channel banks with active sliding. The bottom of the channel would substantially remain unchanged except for high velocity areas where existing rock and boulder materials would be relocated into the channel bottom to construct small hand-placed rock energy dissipaters as shown in figure 2-9.

Efforts would be made to prevent cutting live trees along the wasteway. Live brush would be cut within existing rights-of-way or with the landowner's permission and used to construct live fascines, live cribwalls, vegetated gabions, live stakes, and brush mattresses. Workers would remove or realign any fallen timber from the wasteway that might direct flows into the channel bank. Other fallen timber would be left or rearranged and anchored in the wasteway to serve as energy dissipaters. Stabilization work would continue as needed on impacted sites depending upon the severity of existing erosion and the potential for future bank degradation with released flows.

Figure 2-1. Near vertical wasteway banks

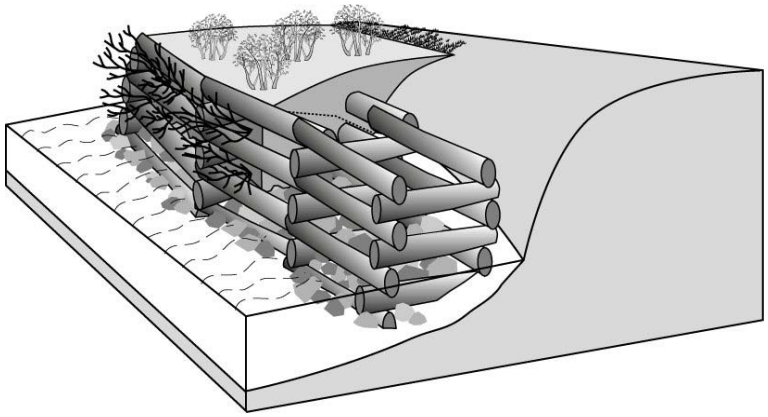

Figure 2-2. Live cribwalls

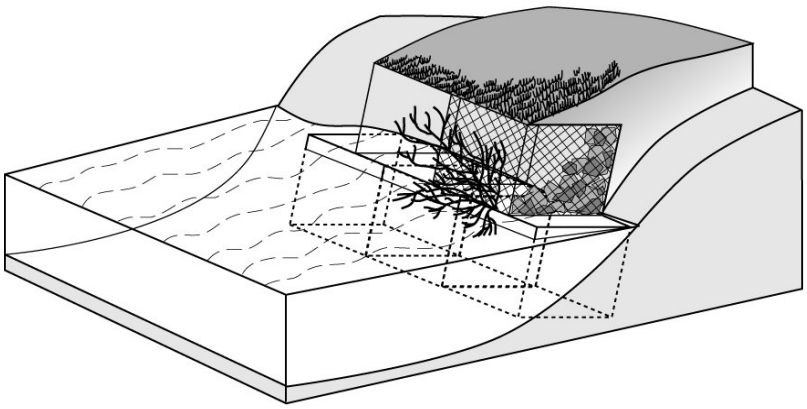

Figure 2-3. Vegetated gabions

Figure 2-4. Sloughing banks

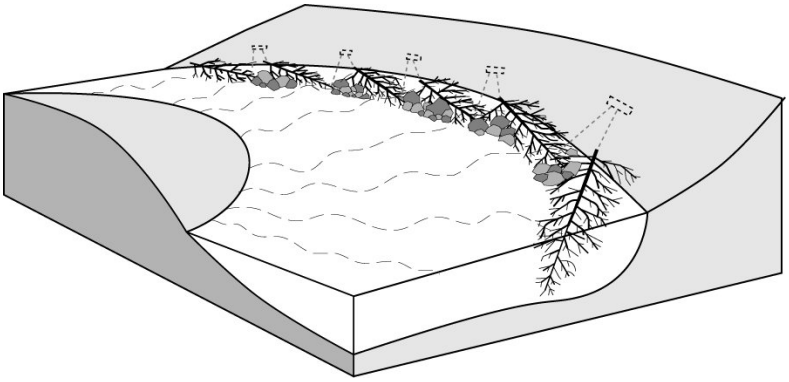

Figure 2-5. Tree revetments

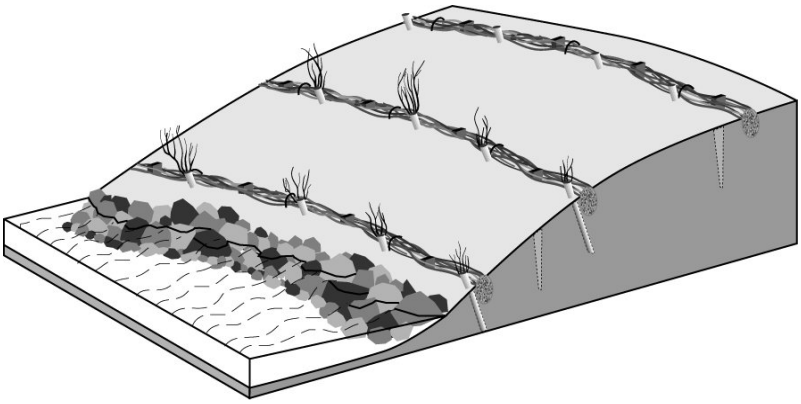

Figure 2-6. Live fascines

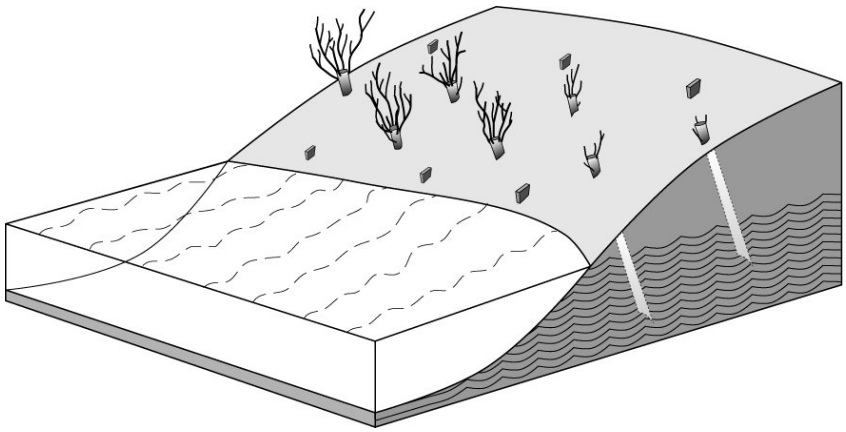

Figure 2-7. Live stakes

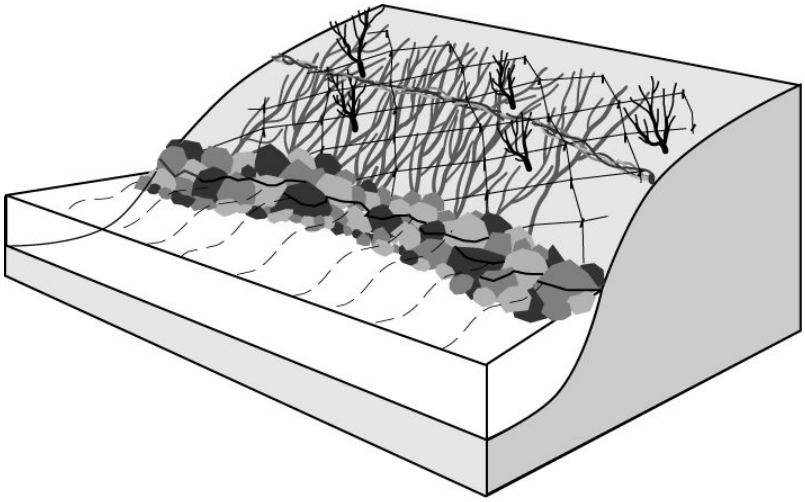

Figure 2-8. Brush mattresses

Figure 2-9. Example of a small hand-placed rock energy dissipater

Bioengineering techniques have three advantages over standard engineering techniques:

Bioengineering Structures	Standard Engineering Structures
made with natural locally available materials	made from large rocks, concrete, steel, and other man-made materials
installed primarily by hand labor, use of standard vehicles, and minimal machinery (Reclamation 2001)	installed by use of heavy equipment (dump truck, front end loader, track hoe, and backhoe)
used in areas of restricted access	used in areas accessible to heavy equipment

Standard Engineering Techniques

The only standard engineering techniques that would be used under this alternative are backfill and riprap armament (figure 2-10) to protect against erosion and upslope plant disturbance in high velocity areas. Minimal concrete and metal components would be used. Heavy equipment would haul and place material; therefore, this method would be limited to locations with easy access.

Figure 2-10. Example of backfill and riprap armament with minimal concrete and metal components

Two possible locations (figures 2-11 and 2-12) for standard engineering techniques are both outside Reclamation's existing acquired rights-of-way and would require negotiations with the landowners. Reclamation would acquire a temporary construction easement from Tyler Creek Road to access the private bridge and culverts.

Figure 2-11. A culvert site where standard engineering techniques would be beneficial

Figure 2-12. A bridge site where standard engineering techniques would be beneficial

Access Road

An access road would be built during dry weather from Tyler Creek Road to the wasteway and aligned within the acquired right-of-way (figure 2-13) to have the least environmental impact to nearby wetlands and other vegetation. The road alignment is positioned as requested by the landowner along a relatively flat area skirting the wetlands to avoid cutting an adjacent steep

bank. Much of the length of the 12-foot-wide primitive, dry weather road would consist of two tracks across existing pasture or an abandoned logging road where large trees have already been cleared (figure 2-14). A 12-foot-wide band of brush and trees would be removed as necessary from within the entire length of the access road alignment. This would include approximately 8 to 10 scrub oak trees, about 20 to 30 small trees, and small shrub-type vegetation. The road would dodge other trees as much as possible within the right-of-way. Neither the existing portion nor new portions of the access road would be paved or graveled. The road design would maintain the natural character of the surrounding landscape. Minimal cut and fill activities would be done on small portions of the access road.

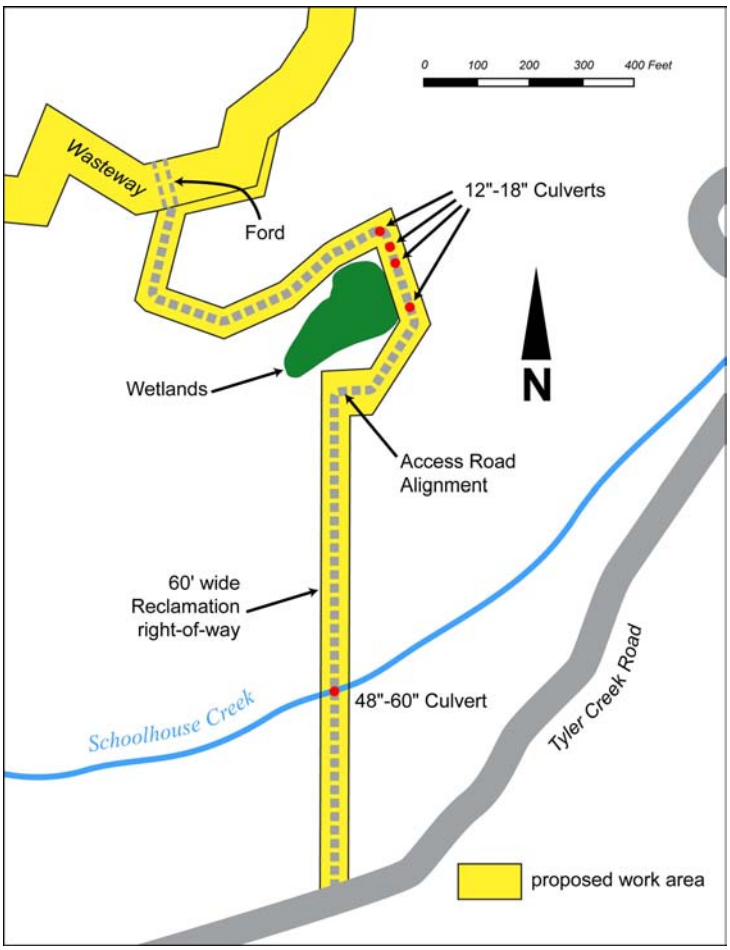

Figure 2-13. Access road alignment

Figure 2-14. The 12-foot-wide primitive dirt road, ungraveled and unpaved, would consist of two tracks across existing pasture or an existing primitive road

The proposed route would include the following crossing structures:

- a 48- to 60-inch-diameter culvert crossing Schoolhouse Creek
- possibly four 12- to 18-inch-diameter culverts crossing small intermittent tributaries to existing wetlands
- a rock or concrete ford crossing the wasteway channel.

Minimal use of heavy equipment (loaded dump truck, front end loader, track hoe, and backhoe) and disturbance of the area would occur during culvert construction. Permits would dictate quantities of material to be removed and fill material to be placed. These structures would be sized to accommodate construction equipment and to pass expected flow. The Schoolhouse Creek culvert area would be the only graded portion of the access road and would be ramped to allow vehicles to cross over the culvert.

A locked gate would block the entrance of the access road at Tyler Creek Road. Reclamation, its agents, successors, and assigns would use the road only during dry conditions to monitor and repair the access road and the wasteway channel. The landowner would have unrestricted use of the road.

The right-of-way agreement with the landowner stipulates that any trees cut for construction of the access road would be laid along the side of the access road for the landowner's use. Slash or debris created during construction of the road and not used for wasteway bank stabilization would be burned, chipped, or buried onsite.

Monitoring and Maintenance

Reclamation and TID would perform annual monitoring of the wasteway each spring, during and after wasteway use, and after high precipitation events. Stabilization would be an ongoing effort for several years. Bioengineering techniques are dependent upon plant growth which is

dependent upon soil type, precipitation, temperature, insect damage, wildlife damage, etc. Continual monitoring during the first few years and replacing dead planted vegetation would enhance bank protection. Monitoring would identify sites of new erosion or potential erosion sites needing stabilization. Early intervention using bioengineering structures at these sites before extensive erosion occurred would increase the effectiveness of the stabilization efforts. Standard engineering structures would be monitored prior to, during, and after periodic releases through the wasteway and repaired as necessary.

Reclamation and TID would perform annual inspection of the access road in early summer and after spring runoff and high precipitation events. Any active road erosion would be corrected with necessary modifications such as water bars or relocation of culverts. The landowner would likely continue to use the road corridor for pasture; therefore, cutting of vegetation along the centerline of the road would not be necessary.

Alternative 3 – Bioengineering Only

Alternative 3 would use only bioengineering techniques to stabilize localized eroded areas of the wasteway banks and upslopes regardless of whether a standard engineering technique would be considerably more effective and reliable.

Easements, Rights-of-Way, and Land Surveys

Land survey and acquisition of easements and rights-of-way would be accomplished in the same manner as described for alternative 2 (the preferred alternative).

Proposed Work Sequence

The work sequence for this alternative would be the same as for alternative 2.

Bioengineering Techniques

This alternative would be 100 percent bioengineering techniques, similar to those described for alternative 2. The one difference is that rather than installing standard engineering structures in areas of high velocity, some of the more sturdy bioengineering structures (such as live cribwalls and vegetated gabions) would be installed.

Access Road

An access road would be constructed from Tyler Creek Road to the wasteway and secured from public access as described for alternative 2.

Monitoring and Maintenance

Reclamation and TID would monitor the access road and wasteway each spring and during and after released flows or after high precipitation events as described for alternative 2.

Alternative 4 – Standard Engineering Only

Alternative 4 would include treating localized eroded portions of the wasteway with liberal use of backfill, lining, and armoring of the slopes using concrete, concrete revetments, and riprap. This alternative would likely exclude the use of vegetation regardless of whether bioengineering techniques would suffice.

Easements, Rights-of-Way, and Land Surveys

Land surveys and acquisition of easements and rights-of-way would be required and accomplished in the same manner as described for alternative 2 (the preferred alternative). The surveys would also assist engineers in designing appropriate standard engineering structures for individual sites and determining the quantity and type of construction materials most appropriate for that site.

This alternative would include additional access rights-of-way at many locations off Tyler Creek Road into the wasteway and the widening of the existing wasteway rights-of-way. Easement and right-of-way acquisitions would be costly.

Proposed Work Sequence

The work sequence for this alternative would be the same as for alternative 2.

Standard Engineering Techniques

This alternative would be 100 percent standard engineering techniques. These structures would likely involve more concrete, metal, and other man-made components than the standard engineering techniques described for alternative 2. Installation would require heavy equipment (loaded dump truck, front end loader, track hoe, and backhoe) to haul and install large boulders, prefabricated structures, and other construction materials; therefore, more access would be needed into and along the wasteway. Stabilization work would continue as needed on impacted sites depending upon the severity of existing erosion and the potential for future bank degradation with released flows.

Access Roads

An access road would be constructed from Tyler Creek Road into the wasteway within the newly acquired right-of-way (figure 2-13) and would be secured from public access the same as described for alternative 2. The sizes of the culverts described for alternative 2 would be the same as for alternative 4. One difference in this alternative is that this road would likely be extended paralleling the wasteway short distances both upstream and downstream as the terrain would allow without major environmental disturbance.

Since standard engineering techniques would require the use of heavy equipment for hauling material and installation, many other access roads off Tyler Creek Road into localized areas of the wasteway would be needed. These roads would also be gated to prevent public access. Equipment, in some locations, could then travel cross country to stabilization sites without building a road if the terrain and vegetative growth permit passage.

The steep terrain in some localized areas would dictate that materials be hauled in and structures built without the aid of heavy equipment. Additional manpower would likely be needed.

Reclamation, its agents, successors, and assigns would use the access roads built under this alternative only during dry conditions to monitor and repair the access road and the wasteway channel.

Monitoring and Maintenance

Reclamation and TID would monitor the access roads and wasteway each spring and during and after released flows or high precipitation events as described for alternative 2.

Chapter 3 — Affected Environment and Environmental Consequences

Chapter 3 – Affected Environment and Environmental Consequences

This chapter describes existing physical, biological, and natural resources that could be affected and it identifies potential impacts to those resources in the event any one of the identified alternatives were implemented.

The No Action alternative (alternative 1) describes conditions in the future if stabilization were not implemented and it provides the basis to compare the action alternatives (alternatives 2, 3, and 4). Specific impacts of each alternative are identified to the extent possible; however, if quantitative estimates were not possible, qualitative analyses are provided for comparison purposes.

The resources discussed include geology, water quality, wetlands, vegetation, fish and wildlife, threatened and endangered species, historic properties, Indian sacred sites, Indian trust assets, Cascade Siskiyou National Monument, and environmental justice. This chapter also describes cumulative effects of the alternatives and mitigation measures for each resource. The depth of analysis corresponds to the range of resource occurrence in the work area and the magnitude of potential environmental impact.

Geology

This section discusses the geology of Tyler Creek watershed, geotechnical recommendations, and potential effects of stabilizing the wasteway banks.

Affected Environment

The wasteway lies within the Tyler Creek watershed in southern Oregon along the western border of the Western Cascades geologic province. Strata in this province dip to the east and consist of folded, faulted, and slightly altered volcanic rocks from between 5 and 33 million years ago (Reclamation 1989). The rocks are generally deeply eroded and their original volcanic land forms are not easily recognized.

Western Cascade rocks underlying the watershed vary from massive, bluff forming lava flows to weak, fragmented, and landslide-prone ashflow and decomposed volcanic ash beds. The rocks consist of basaltic lava flows and angular, course fragments (breccias) of layered and altered basaltic glass (Orr et al. 1992). Some of the soils have high shrink-swell properties and are highly susceptible to landslide. A principal geomorphic feature of Tyler Creek watershed is major landslide deposits (Hicks 1993) within the deeply weathered volcanic rocks.

Wasteway Erosion and Landslides

The wasteway channel carries released flow, intermittent natural flow during periods of snow pack runoff and precipitation, and drainage from increased population and development. Water flowing through the wasteway has eroded the channel and directly led to the need for action. Excessive erosion decreases water quality and makes the streambanks less stable. Slopes adjacent to the wasteway could slide and restrict the channel with debris jams. Debris jams could cause new channels to form which could also be unstable and could erode in the same manner.

Reclamation's Geologic and Geotechnical Studies

The following discussion summarizes geologic and geotechnical studies and reports preformed by Reclamation following the 1993 wasteway use. A separately bound geology appendix contains the two Reclamation studies in entirety and is available, along with this EA, for public review at website: www.usbr.gov/pn/programs/tyler/index.html.

Reclamation's Pacific Northwest Regional Geologist conducted a geologic field review of the wasteway in November 1993 (Reclamation 1993) and a geotechnical field review of the wasteway in 1997 (Reclamation 1997) to observe site conditions and provide recommendations for restoring, rehabilitating, and/or relocating wasteway alignments. The reports state the wasteway contains erodible materials that, in intermittent locations, were degraded by streamflow. Some locations with undercut and over steepened banks caused small landslides that further impacted the channel. Ancient earthflow and landslide deposits beneath the ridge area between Tyler Creek and Schoolhouse Creek have been stable in historic time as indicated by numerous larger trees. The reports state the wasteway channel will continue to deteriorate without protection and recommend:

- resloping and protecting channel banks where erosion has created instability
- using existing rocks and downed trees to protect the channel and slopes
- using standard engineering structures for erosion protection
- downing potentially unstable trees
- removing some downed trees and erosion debris
- abandoning the central portion of the area of considerable erosion
- realigning the central portion of the wasteway to the north
- thoroughly documenting before and after channel conditions

Privately Completed Studies

Three private studies, completed following the 1993 wasteway use, are summarized here.

Hicks Reports

Rogue Valley Council of Governments (RVCOG) contracted with consulting engineering geologist Bill Hicks in 1993 (Hicks 1993) to study past and potential geologic failures in the wasteway drainage. Then in 1996, local landowners hired Mr. Hicks to report on damage to the their property (Hicks 1996).

Both reports describe wasteway erosion and landslide activity that Mr. Hicks attributes fully to discharge from the wasteway pipe outlet. He states the basic problem is that the bypass outlet was sited on a channel flowing onto a major earthflow. This earthflow mass is predominantly naturally stable under present climatic conditions except when subject to excessive impacts such as surface water diversion. He states major seismic events combined with wet periods can also destabilize these earthflows. This movement is a natural process and does not indicate massive failure is imminent without greatly increased unnatural impacts.

Mr. Hicks states the 1993 discharge into the wasteway created a major disturbance to the surrounding terrain. The only landslide activity known on the ancient Tyler Creek earthflow is along the channel downstream from the wasteway pipe outlet, along the wasteway, lower Schoolhouse Creek, and lowermost Tyler Creek. He estimates a net volume of 128,000 cubic yards of material was transported from the system during a 1980s high flow event and the 1993 event.

Mr. Hicks made several recommendations including some beyond the purposes of and need for action. His recommendations that fall within the scope of this EA are:

- not doing massive channelization/stabilization
- developing stabilization methods which would have the least overall impact
- implementing a designed biostabilization revegetation program using native grasses, shrubs, trees, and the correct vegetative successional sequence for stabilizing plant growth
- not building roads to remove trees from the channel
- not using creative, temporary solutions
- performing topographic mapping of the area to insure the overall geologic integrity of the area is not adversely affected
- surveying the land to ensure minimum impact to the surrounding environment prior to any additional road modifications or reconstruction
- letting the main failure area (the area of considerable erosion) attain its own equilibrium over time; a natural and relatively stable grade will eventually develop

1999 Tyler Creek Monitoring Project

In 1999, FOG conducted a 1-year study (FOG 2000) of contributions that mass wasting, landslides, irrigation water delivery, and livestock in the Tyler Creek and adjacent drainages make to the high nutrient level in the Bear Creek subbasin. The following is a summary of the report as it relates to geology.

The FOG report states mass wasting from an unrestored wasteway channel was the main sediment source for year round phosphorus exceedances in the Bear Creek system. The released flow over the lower surface of an ancient landslide cut a wider, deeper, and larger eroded canyon at the lip of the landslide. About 2 miles of channel were gutted and perhaps 200,000 cubic yards of material were removed. Even intentionally diverting the flow did not stop the erosion, slumping, and slope failures in the canyon area (the area of considerable erosion).

The FOG report pointed out several watershed sources of erosion and activities unrelated to the wasteway and Reclamation activities, but that contribute large quantities of pollutants to the

watershed's river system. These include aggressively harvesting forests, massive soil disturbance with other man-caused slope instabilities, clear cutting steeply sloping mineral soils, road construction and slurry grinding techniques, bulldozing large drainage channels, major geologic faults with movement, extensive trenching and earthmoving to install underground cables, downcutting and erosion with extensive streambank failures in other creeks, and high precipitation events.

Future Detailed Geologic or Geotechnical Studies

Current laws, agency regulations, guidelines, and policy give Reclamation authority to complete this environmental assessment, to stabilize the wasteway, and to build access to the wasteway. The *Surveying the Wasteway Channel* section in chapter 2 describes future investigations pertinent to stabilizing the wasteway that Reclamation would perform.

Environmental Consequences

Alternative 1 – No Action

The absence of preventative maintenance and bank stabilization would likely result in continued erosion of the wasteway. The potential for landslides and further erosion adjacent to the wasteway could worsen as would downstream water quality from increased suspended sediments. The No Action alternative would adversely impact the wasteway and the environment.

Alternative 2 (Preferred Alternative) – Bioengineering Combined With Standard Engineering

The preferred alternative incorporates many of the recommendations made in the previously mentioned Reclamation and privately completed studies. This alternative would reduce erosion, stabilize wasteway banks during high flows, and minimize further degradation of the wasteway and its banks. By eliminating the erosion problem, the likelihood of reactivating a landslide would be reduced.

Standard engineering structures made of riprap would provide immediate protection. Bioengineered structures would rely heavily on live native vegetation to stabilize the channel. Designs for the stabilizing structures would include supporting crib structures, revegetation, root wad systems, and large boulders to serve as energy dissipaters. The full benefit of these structures would be realized after a period of a few years while the plants grew and developed root systems. The root systems and supporting structures would anchor the slopes and protect against sloughing and washouts. However, until the plants became established, water diverted through the wasteway could continue to erode the channel and make the banks less stable. The standard engineering structures in high velocity areas would reduce this effect. Annual stabilization efforts would continue until 80 to 90 percent of those areas susceptible to erosion have been stabilized.

The access road would have no effect on the local geology since the road surface would not be graded and the road would only be used during dry weather.

Alternative 3 – Bioengineering Only

This alternative would result in the most natural looking corrective measure and has many similar effects as alternative 2. It incorporates many of the recommendations made in the previously mentioned Reclamation and privately completed studies. The vegetation would eventually cover any infrastructure of the bioengineered structures. Long-term use of the wasteway, especially with high volume flows, could damage restoration work and make it necessary to replant. Stabilization work would continue as needed on impacted sites depending upon the severity of existing erosion and the potential for future bank degradation with released flows. Monitoring restoration sites would be critical to the success of bioengineered wasteway stabilization. Like the preferred alternative, annual stabilization efforts would continue until 80 to 90 percent of those areas susceptible to erosion have been stabilized.

Some sites could be inappropriate for bioengineering techniques. Plants and supporting structures placed in severely damaged areas with high velocities would not likely withstand the water's force and could easily erode; whereas standard engineering structures would be built to withstand the water's force. This alternative's lack of standard engineering structures makes it less reliable and stabilization efforts could continue for more years than the preferred alternative.

The access road would have no effect on the local geology for the same reasons described for alternative 2.

Alternative 4 – Standard Engineering Only

While this alternative would incorporate a few of the recommendations from the previously mentioned Reclamation and privately completed studies, it would contradict many of the other recommendations. Stabilizing the wasteway with riprap, concrete revetments, and other standard engineering structures would immediately reduce local areas of bank erosion during periodic use of the wasteway and would provide greater certainty of success than alternative 3.

These structures would likely be more environmentally intrusive (more concrete, metal, and other man-made components) than the standard engineering techniques described for alternative 2. Those lengths of the wasteway with the greatest likelihood of future erosion could be completely lined with man-made structures. This alternative would be less natural and more artificial in appearance. It would drastically change the natural character of the wasteway by potentially transforming it into a channelized canal for conveyance of released water.

Standard engineering approaches would require heavy equipment to haul and install large boulders, prefabricated structures, and other construction materials; therefore, more access to the wasteway would be needed.

Cumulative Effects

BLM management of the Cascade Siskiyou National Monument ensures a high level of resource protection on BLM land. Increasing development around the wasteway impacts geological resources

as more people move in, build homes and roads, install wells and septic systems, and graze more cattle.

Doing nothing to prevent further erosion of geologic resources in and around the wasteway would cause the most damaging cumulative effects. The preferred alternative would reduce cumulative effects by involving BLM and other landowners in discussions on site-specific stabilization efforts and providing a natural and effective solution that protects the geologic resource. The preferred alternative would also stabilize the wasteway, thereby decreasing any erosion impacts that could be caused by runoff from the increasing development.

Mitigation

Most of the access road would consist of existing pasture or existing primitive roads. Construction activities would occur during installation of culverts at Schoolhouse Creek and around the wetlands. Areas of construction would be reseeded to prevent future erosion. Use of the access road would be restricted to Reclamation, its agents, successors and assigns, and the property owner during dry conditions.

Reclamation would use best management practices to minimize environmental consequences caused by stabilizing activities or constructing the access road. All standard and reasonable precautions would be taken to reduce erosion during and after construction.

Water Quality

Reclamation has no water quality data specific to the wasteway and is unaware of any such available data; therefore, this analysis is based on data gathered by other agencies, Section 303(d) of the Clean Water Act, and other reports. This section discusses the big picture of existing water quality conditions in Emigrant Creek basin as well as how factors beyond Reclamation's control and beyond the wasteway influence water quality throughout the basin.

This section also identifies known water quality conditions and how implementing any of the four alternatives could affect water quality.

Affected Environment

The 5,600-acre Tyler Creek watershed, within the middle Rogue subbasin, has its headwaters to the east in the Siskiyou Mountains (FOG 2000). Water diverted through the wasteway flows into Schoolhouse Creek, Tyler Creek, Emigrant Creek, and then into either Ashland Lateral or Emigrant Lake.

The Clean Water Act requires states to develop a 303(d) list and total maximum daily loads (TMDLs). The list addresses water bodies where water quality impairs or threatens the established beneficial uses, and the TMDLs address the pollutants causing the beneficial use impairment. ODEQ develops the 303(d) list and TMDLs for Oregon. Several water bodies within the Rogue River basin are

included on the 303(d) list; only three are near the wasteway. Once water released through the wasteway reaches Tyler Creek, factors outside the wasteway also influence water quality.

Water temperature during the summer is the only listed water quality deficiency in the Tyler Creek watershed. Sediments, nutrients, and other pollutants have not been identified on the 303(d) list as water quality impairments in the Tyler Creek watershed.

Water Temperature

Water quality problems occur in streams when the water temperature during the summer becomes too high for many aquatic organisms to function normally. High water temperatures can be caused by low flow, solar heating, or lack of vegetation. The lack of vegetation reduces shade, thereby, increasing the amount of solar heating of the stream. High water temperatures can lead to changes in aquatic species composition (FISRWG 1998). ODEQ's salmon fish-rearing water temperature criteria is 64 °F for the middle Rogue subbasin.

Figure 3-1 shows the water bodies within the wasteway area that are considered temperature limited as compiled from Section 303(d). ODEQ added Tyler Creek (Segment 15B-TYLE0) and Hobart Creek (Segment 15B-HOBA0) to the 303(d) list in 1998 for exceeding the water temperature criterion based on data provided by FOG from sample sites upstream from Hobart Creek. ODEQ reported from these data that the 7-day average maximum temperature in 1996 was 68.6 °F for both Tyler Creek and Hobart Creek and 78.1 °F for Tyler Creek in 1997 (ODEQ 2001). Hobart Creek and the upper reaches of Tyler Creek are unaffected by the wasteway flows.

FOG recorded the 7-day average maximum temperature at two Emigrant Creek sites (upstream from Carter Creek and Baldy Creek - Segment 15B-EMIG6) in 1996 at 67.9 and 67.6 °F. The Baldy Creek site is unaffected by wasteway flows. Four sites within Emigrant Creek exceeded the temperature criterion in 1997 with recordings of 67.5, 66.7, 66.5, and 68.9 °F.

BLM collected water temperature data in the Tyler Creek watershed during installation and retrieval of stream temperature recording equipment and during mid-summer audits in 1999 (Montfort 2002). These data confirm FOG data showing water temperatures downstream from the wasteway's confluence with Schoolhouse Creek exceed the ODEQ temperature criterion for salmonid rearing.

BLM data collected in 1999 in Schoolhouse Creek upstream from the bridge and lower and middle culverts (figure 3-1) show the 7-day average maximum water temperature to be 57.7 °F. Since Reclamation did not operate the wasteway in 1999, these data provide baseline temperature conditions in the area.

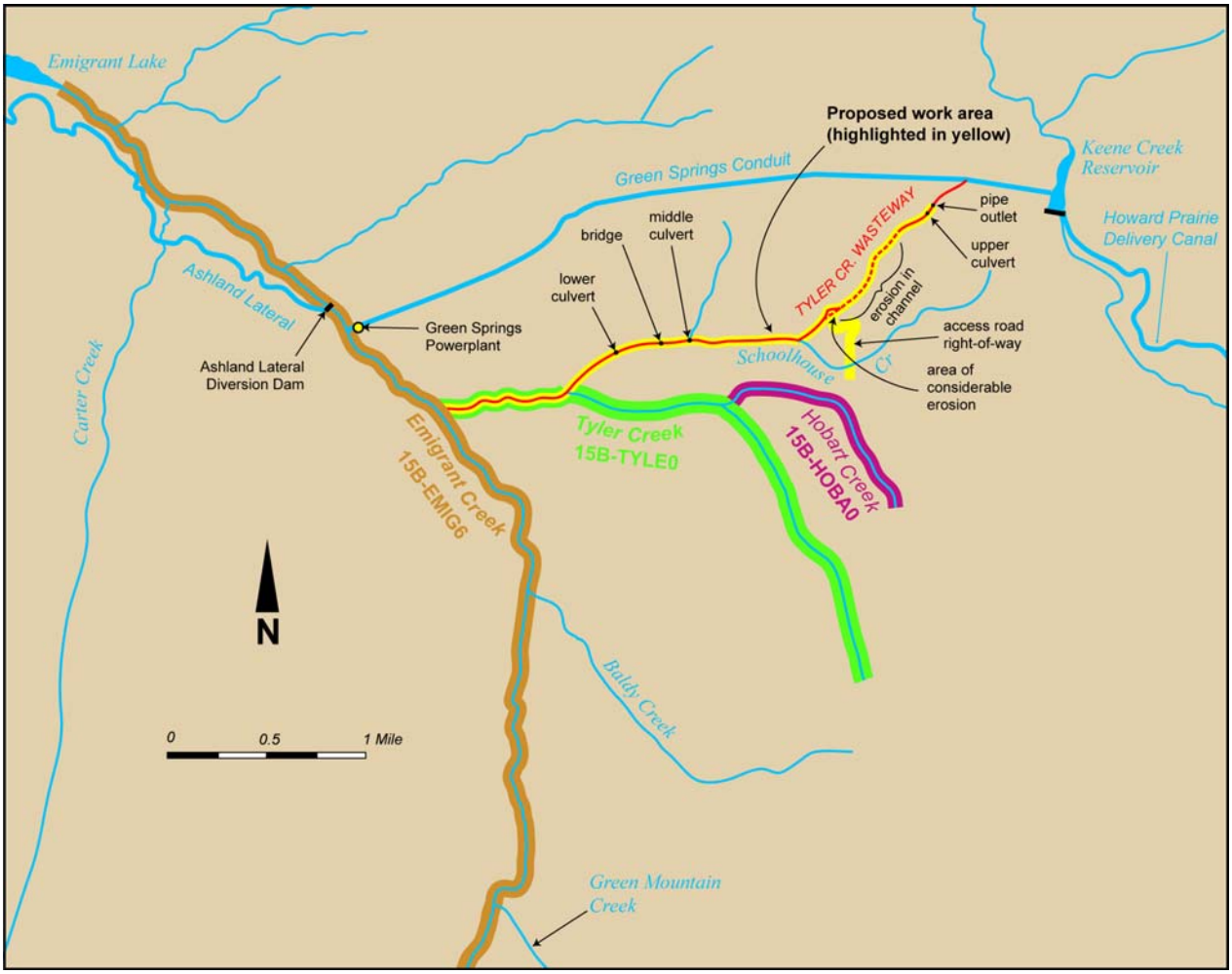

Figure 3-1. Streams exceeding water temperature standards
[based on 1998 Oregon State 303(d) list]

Sediments

Water in the wasteway channel flows over volcanic deposits and causes natural increased turbidity. This process occurs with spring runoff, heavy precipitation, runoff from development, and Reclamation's use of the wasteway. This flow undercut some of the wasteway banks indicating an unspecified volume of sediments is being scoured out and moved downstream. The suspended materials eventually settle out in lower Tyler Creek and Emigrant Creek and could be carried downstream as far as Emigrant Lake.

Nutrients

Wasteway bank erosion releases natural chemical nutrients contained in the soil and rocks moving them downstream with sediment particles (FISRWG 1998). Other nutrients such as phosphorus and nitrogen, if present in the soils, are potential problems as well. Phosphorus can enter the water system from septic systems, cattle waste, fertilizers, and erosion. Phosphorus is essential for plant growth, but its presence at high levels can lead to algal blooms. Overgrowth of algae and other aquatic plants in streams and wetlands causes changes in the aquatic environment by decreasing pH and dissolved

oxygen and increasing carbon dioxide. These changes degrade the aquatic habitat and overall water quality.

Friends of the Greensprings (FOG 2000) did monthly testing for ortho-phosphorous and/or total phosphorous for the entire year in 1999 at 25 sites across 45,000 acres. Eighteen of those sites were in the Tyler Creek watershed. They measured phosphorus levels and estimated streamflow monthly. The following nutrient discussion is based on the FOG report.

> FOG intended to collect and analyze wasteway water samples for their study, but Reclamation had no reason to release water into the wasteway during 1998 or 1999 thus the wasteway upstream from Schoolhouse Creek was dry on all sampling days. Data from watershed sites outside the wasteway provide a baseline description of phosphorous levels occurring in the watershed. However, the direct wasteway contribution to the watershed for phosphorous and other nutrients remains unknown.
>
> While the FOG report describes the wasteway as the main cause of sediment, it states that until their 1999 study, there was a data gap in phosphorus levels along the east side of the Bear Creek subbasin. It further states that phosphorus levels measured at multiple project sites, including immediately below Greensprings Powerplant, did not exceed the Bear Creek total phosphorus TMDL limit of 0.08mg/L.
>
> Casual review shows ortho-phosphorus typically increases during rainy months and, while some streams remain moderately high year-round, Emigrant, Tyler, and Schoolhouse Creeks appear to exceed allowable phosphorus levels as defined in the Bear Creek TMDL during most of the year.
>
> Released water flowing through the wasteway would otherwise have gone through Green Springs Powerplant had it not been diverted. The FOG study shows phosphorus levels in the Green Springs Powerplant discharge remained lower than the Bear Creek phosphorus TMDL. The study states the TID/Reclamation water delivery system contains little reactive phosphorus and does not contribute to phosphorus exceedances in the Bear Creek system when the irrigation water is confined within man-made canals, channels, and other TID/Reclamation facilities. No month in 1999 showed total phosphorus levels in these facilities reached the Bear Creek limit.
>
> The report states it is clear that the dilution effect of TID water transfer through the powerplant does not appear to increase the total phosphorus level in the Tyler Creek area. Other activities (i.e., grazing, agriculture, and forestry) may contribute large quantities of sediment, turbidity, and soluble phosphorus into the Bear Creek system through the Tyler Creek project area. These man-caused sediments and natural sediments settle out in Emigrant Lake and perhaps, are remobilized by recreational boating as the reservoir is drawn down.
>
> Storm events send additional pulses of suspended sediment believed to be high in phosphorus into the streams. Generally, turbidity levels and total suspended solids increase with storm water flows; anecdotal data indicate Schoolhouse Creek turbidity has decreased

since the 1993 use of the bypass. No data were gathered during earlier storm events. RVCOG believes erosion is a major water quality problem in Tyler Creek. A significant portion of the phosphorus load probably results from a few annual peak runoff events transporting eroded materials and phosphorus into the stream.

The FOG study offers some evidence for the relative phosphorus contribution from specific areas of the Schoolhouse drainage. Surface waters gain phosphorus between the upper culvert and lower culvert on Schoolhouse Creek, but it appears this may be due to the addition of ground water to any surface flow in dry months. Schoolhouse Creek at the upper culvert and at the middle culvert were dry at the surface for 2 to 6 months, yet flow was observed at the lower culvert. About ten springs, mostly perennial and including the original Greensprings are present in the Schoolhouse Creek drainage. Ground water seeps into the eroded channel. Other ground water sources may exist. Monthly monitoring at the lower Schoolhouse Creek culvert just upstream from the confluence with Tyler Creek found total phosphorus exceeded the Bear Creek TMDL limit most of the year.

The lowest values of specific conductance of Schoolhouse Creek occur at high flow winter months and the highest values occur at low-flow, late-summer months. Conductance also appears to increase lower in the watershed, possibly due to a higher percentage of surface flows originating as ground water.

Monthly monitoring at the confluence of Carter Creek with Emigrant Creek found total phosphorus exceeded the Bear Creek TMDL limit more than half the year. An abrupt increase in Carter Creek turbidity at the confluence with Emigrant Creek was first noticed in early 1998 following the State's removal of all vegetation from about 5 acres of steeply sloping forest land.

A 1990 timber harvest on Hobart Creek caused 150,000 cubic yards of mud, boulders, and vegetation to flow into Hobart Creek. Rains mobilize the slide and the turbidity is visible where Tyler Creek passes beneath Buckhorn Springs Road on the valley floor. This level was 400 percent greater than any other stream turbidity level encountered but equaled the 400 NTU measured in 1998 in Schoolhouse Creek that appears to have been related to landslide movement following 1-inch of rain in the previous week. Tyler Creek at Hobart Creek, as well as Schoolhouse Creek at the middle and upper culverts, were checked for turbidity at the same time but showed no appreciable turbidity. A dramatic increase in bedload and sediment transport into Tyler Creek has been observed, with angular tan gravel, sand, and silt aggrading many pools to the mouth of Emigrant Creek. Peak turbidity in Hobart Creek in early May did not coincide with peak flow in late February for Hobart and Tyler Creeks.

The Hobart landslide and the Carter Creek erosion routinely caused 100 to 400 NTU increase above background data during storm events. No detectible nitrate or nitrite was found in samples indicating nitrate and nitrite levels are below the detection limits for the test methods used. The FOG report concludes testing of wasteway flows is critical to understanding the wasteway's contribution of phosphorus to the drainage.

Data show the Schoolhouse Creek watershed can naturally exceed the Bear Creek total phosphorous TMDL throughout most of the year.

Diluted Pollutants

Wasteway flow becomes an increasingly smaller proportion of the total flow as it continues downstream into Emigrant Creek and through Rogue River basin. Point and non-point source pollutants through developed residential and commercial areas can be substantial and could be greater than sediment originating from the wasteway. Any pollution originating from the wasteway becomes diluted once it reaches Emigrant Creek.

Drinking Water

The city of Ashland gets its water supply from two sources: 1) Ashland Lateral, and 2) a water exchange with willing parties on the East Fork Ashland Creek. Most years, Ashland exercises the water exchange, getting its drinking water supply from the East Fork Ashland Creek, not from Ashland Lateral. The wasteway has no effect whatsoever on Ashland Creek or on its water quality.

Water diverted through the wasteway eventually flows into either Ashland Lateral or Emigrant Lake. Ashland Lateral extends 12 miles from Ashland Diversion Dam before reaching the city of Ashland. Any sedimentation the wasteway might introduce to Emigrant Creek or the lateral would likely settle out or flow down Emigrant Creek or settle out in the lateral rather than flow 12 miles downstream to enter the city's water supply. Return irrigation flows along the 12-mile length of the lateral are more likely to cause pollution to Ashland's water supply than would sedimentation from the wasteway.

The city of Ashland discharges waste water into Bear Creek. Releases through the wasteway and Ashland Lateral and releases from Emigrant Lake benefit Bear Creek by diluting the city's waste water.

Environmental Consequences

Alternative 1 – No Action

The wasteway's baseline water quality conditions occur under the No Action alternative. Schoolhouse Creek would continue to exceed ODEQ's salmonid rearing water temperature criterion, and without intervention, Tyler Creek would likely remain on the 303(d) list. Bank erosion in the wasteway would continue the process of washing an unquantified amount of sediment downstream, especially during heavy spring runoff. Phosphorus, nitrogen, and other chemical nutrients present in wasteway sediments would leach into the creek and reservoir waters downstream. These issues will likely be addressed through Oregon's TMDL process. Implementation of a TMDL in this watershed will continue with or without stabilization efforts.

Alternative 2 (Preferred Alternative) – Bioengineering Combined with Standard Engineering

This alternative would offer the greatest likelihood for success in improving water quality. Stabilizing the wasteway with a combination of standard engineering and bioengineering techniques would reduce erosion along the channel banks resulting in reduced levels of sediment and nutrients released downstream. Sites stabilized with standard engineering techniques would have an immediate reduction in localized erosion. Slightly lower water temperatures could occur with increased vegetation and riparian shade along the wasteway.

Diverting water from Keene Creek Reservoir into the wasteway is likely to decrease Schoolhouse Creek water temperatures since the reservoir is generally cooler than shallow natural summer flow through the wasteway. Likewise, Emigrant Creek water temperature should decrease when released water flows through the wasteway.

Alternative 3 – Bioengineering Only

Sites where standard engineering techniques would be used for the preferred alternative would instead be stabilized under alternative 3 with live vegetation. Erosion and the release of sediment and nutrients would continue in these high velocity areas as plants would continue to wash out. The levels of sediment and nutrients would be less than under the No Action alternative but more than alternative 2. Alternative 3 would extend the number of years until the vegetation would become well established and would take several years longer to accomplish the same water quality improvements as the preferred alternative. Slightly lower water temperatures could occur with increased vegetation and riparian shade along the wasteway.

Alternative 4 – Standard Engineering Only

This alternative would provide the fastest reduction of erosion, sedimentation, and nutrients. Water temperature would likely increase with removal of local vegetation.

Cumulative Effects

Past activities beyond Reclamation's jurisdiction (livestock grazing, aggressive timber harvests, massive man-caused soil disturbances, clearing of all vegetation from steep slopes, public road construction and repair, terracing of slopes, extensive trenching and earthmoving, extensive streambank failures outside the wasteway area), as well as large precipitation events and the natural process of erosion, contributed to the watershed's water quality problems. Future pollution from these activities and similar land uses on public and private land could keep the Tyler Creek watershed an area of water quality concern. Organizations should continue monitoring the watershed's water quality to identify trends early and prevent further water quality decline.

Water quality improvements in a tributary of the watershed would help reduce cumulative effects within the watershed. The preferred alternative is designed to improve water quality. It would reduce cumulative effects by reducing wasteway erosion and, thereby, reducing sediment and nutrients

released from the wasteway. The preferred alternative's increased vegetation and riparian shade would slightly lower water temperatures.

Mitigation

Construction activities would occur during installation of culverts at Schoolhouse Creek and around the wetlands. Reclamation would use best management practices to minimize environmental consequences caused by stabilizing activities or constructing the access road. All standard and reasonable precautions would be taken to reduce erosion and limit sediment during and after construction. Areas of construction would be reseeded to prevent future erosion.

Wetlands

Wetlands have two major characteristics:

- soils free of oxygen during the growing season due to saturation (hydric soils)
- vegetation tolerant of those soils (hydrophytic vegetation).

Wetlands have many important environmental functions such as providing high-quality habitat for fish and wildlife, flood water storage, sediment removal, and ground water recharge.

Affected Environment

Reclamation accompanied ODSL on a 2000 site visit to examine the proposed wasteway access road alignment and identify any wetlands as defined by the Clean Water Act. ODSL identified a 1/4- to 1/2-acre wetland adjacent to the proposed access road alignment as shown in figure 3-2. The entire wetland area is inundated but the surface water decreases in size after spring runoff stops. Evaporation and the lack of precipitation also reduce the surface water. The wetland is occupied by common wetland species, such as sedges and rushes. ODSL identified no emergent wetlands within the wasteway channel.

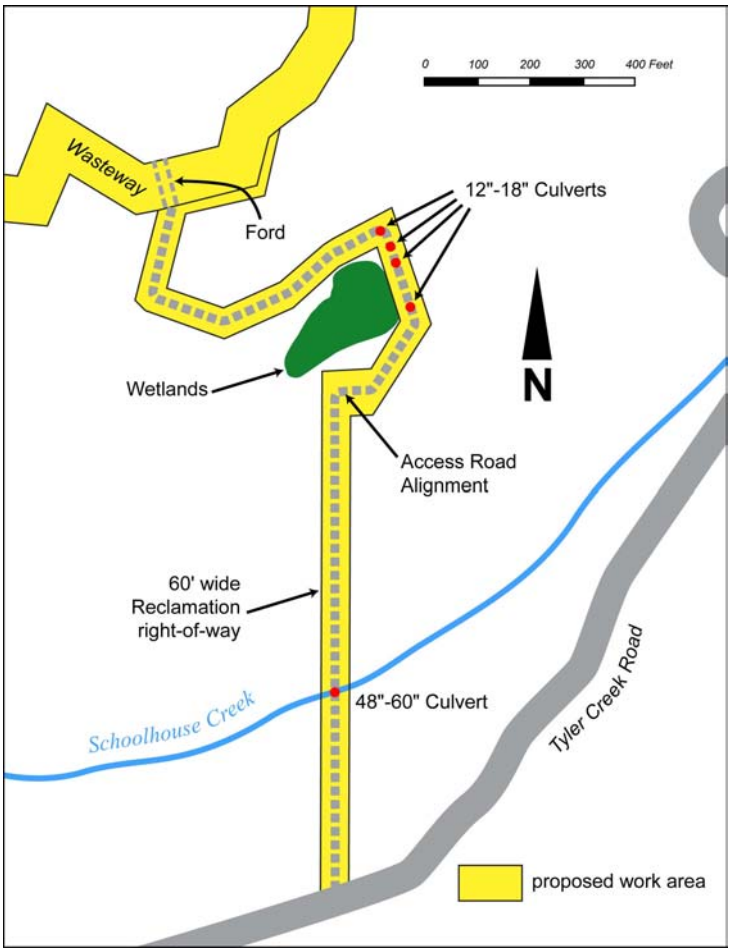

Figure 3-2. Wetlands adjacent to the proposed access road alignment

Environmental Consequences

Alternative 1 – No Action

The No Action alternative would have no beneficial or adverse impacts on wetlands.

Alternative 2 (Preferred Alternative) – Bioengineering Combined With Standard Engineering

A goal of the preferred alternative is to preserve the local wetland ecosystem. Reclamation would obtain a removal/fill permit from ODSL and a CWA 404 permit from the Corps prior to road construction. In all, less than 50 square feet of wetlands could be affected. Culverts would be installed where the road would intersect small intermittent tributaries entering the wetlands. A ford would be installed across the wasteway channel. The permit application would specify quantities of material to be removed and fill material to be placed while installing culverts and the ford crossing. The road alignment would minimize wetland impacts to the extent possible while remaining within the Reclamation rights-of-way. The permits could be conditional on mitigation, timing of work, and other construction limitations at the discretion of the Corps and ODSL.

Installing a crossing on Schoolhouse Creek could add an estimated 50 to 100 cubic yards of fill material and riprap to stabilize the banks upstream and downstream from the culvert. No quantifiable impacts would occur at the small culverts around the perimeter of the wetlands or in the way the wetland functions. The Corps and ODSL, through the CWA 404 permitting process, would determine how Reclamation would mitigate for the any loss of the wetlands.

Streambank stabilization efforts within the wasteway would not affect emergent wetlands.

Alternative 3 – Bioengineering Only

Alternative 3 would have the same impacts as the preferred alternative (alternative 2).

Alternative 4 – Standard Engineering Only

Alternative 4 would have the same impacts as alternative 2.

Cumulative Effects

The Corps and ODSL regulate the loss (from dredge and fill activities) of wetland habitat through permitting programs that track the loss and creation of wetlands. While replacement wetlands are less likely to function as well as naturally occurring wetlands, they are better than losing wetlands and are a means of preserving wetland values. The small area affected by the preferred alternative would not significantly alter wetland values.

Mitigation

The ODSL permit and CWA 404 permit would specify mitigation measures for loss of wetlands, change in character of wetlands, or damage to wetlands. Mitigation often involves replacement in nearby similar habitats by creating a new wetland or restoring and expanding an existing wetland. The replacement wetlands typically would be two or three times larger than the lost wetlands. The permits would specify the exact ratio and should prevent an overall loss of wetlands values. Reclamation would be committed to following all conditions of State of Oregon and Corps permits.

Vegetation

This section discusses the diversity of plants and the riparian plant community within and adjacent to the wasteway.

Affected Environment

The wasteway lies within a climatic zone that should support revegetation efforts by both seeding and transplanting. The mean annual precipitation at Ashland, Oregon, is approximately 19.5 inches and the mean annual temperature is 52.1 °F. Precipitation at the wasteway is likely slightly higher because of the higher elevation, and temperatures are likely slightly lower. (Reclamation 2001)

Riparian vegetation growing in the moist habitat adjacent to the wasteway provides:

- substrate support
- shade cover that keeps water temperatures cooler
- nutrients to the aquatic ecosystem
- structural habitat for a variety of wildlife.

A biota list of understory vegetation within the affected riparian zones directly adjacent to the wasteway channel is shown in table 3-1. The channel bottom and streambanks are characterized by dominant vegetation consisting of willows (*Salix* spp.), snowberry (*Symphoricarpos* spp.), alder (*Alnus* spp.), currant (*Ribes/Rubus* spp.), sedge (*Carex* spp.), and various grasses. Upland sites adjacent to streambanks and/or lower riparian sites were dominated by varying forb/grass associations in the understory with mixed conifer overstory. (Reclamation 2001) Many of the same vegetation species inhabit the access road corridor.

Disturbances such as erosion, livestock grazing, and human activities can be detrimental to riparian zone plants. Recolonization of a riparian zone often occurs from nearby plant sources when the environmental conditions (such as a plentiful water supply, adequate soils, and sunlight) are right. This natural process is occurring within the area of considerable erosion with recovery of native herbaceous and woody vegetation (Reclamation 2001). Natural recolonization and succession of plant communities can be a slow process. Manual revegetation can often occur over relatively short time periods; therefore, revegetation techniques can speed up the natural process.

Table 3-1. Vegetation Found in the Local Vicinity of the Work Area	
Scientific	Common
Grasses/Sedges	
Festuca arundinacea	Tall fescue
Elytrigia elongata	Tall wheatgrass
Bromus japonicus	Japanese brome
Bromus tectorum	Downy brome
Hordeum pusillum	Little barley
Bromus carinatus	California Brome
Carex spp., *Eleocharis* spp.	Sedge
Poa pratensis	Kentucky bluegrass
Blepharoneuron tricholepis	Pine dropseed
Festuca thurberi	Thurber fescue
Festuca spp.	Other fescue(s)
Forbs	
Vicia americana	American vetch
Liatris spp.	Gayfeather
Lesquerella spp.	Bladderpod
Centaurea solstitialis	Yellow starthistle
Asclepias spp.	Milkweed
Lupinus spp.	Lupine
Calochortus spp.	Lily
Thermopsis spp.	Golden banner
Geum macrophyllum	Mountain avens
Rubus parviflorus	Thimbleberry
Smilacina spp.	False Solomon's seal
Potentilla spp.	Herbaceous cinquefoil
Rubus spp.	Blackberry
Lathyrus spp.	Peavine
Shrubs	
Salix lucida spp. *lasiandra*	Pacific willow
Salix spp.	Willow
Symphoricarpos spp.	Snowberry
Fraxinus latifolia	Oregon ash
Calocedrus decurrens	Incense cedar
Alnus spp.	Alder
Rosa spp.	Wild rose
(Reclamation 2001)	

Environmental Consequences

Alternative 1 – No Action

The absence of preventative maintenance and bank stabilization would likely result in continued erosion of the wasteway banks and loss of vegetation. The potential for further loss of existing vegetation from landslides and erosion could worsen under the No Action alternative.

Alternative 2 (Preferred Alternative) – Bioengineering Combined With Standard Engineering

Stabilizing the wasteway would have an overall positive effect by preserving and increasing the overall riparian vegetation along the wasteway. The preferred alternative would result in some loss of riparian vegetation, particularly in those areas where standard engineering techniques were used. Backfilled and riprap armament structures would protect upslope plants from disturbance caused by further erosion. Bioengineering techniques would increase the overall amount of vegetation within the wasteway channel. Some temporary loss of vegetation could occur due to loss of wood materials used for installation of bioengineered structures. The lost vegetation would, however, be replaced with native plantings that would stabilize disturbed and eroding banks, enrich the stabilizing structures, and function as riparian habitat.

The removal of some trees and vegetation would be unavoidable along some reaches of the access road. The removal of trees and plants to build the access road would be an irretrievable loss.

Alternative 3 – Bioengineering Only

This alternative would preserve and increase riparian vegetation along the wasteway. Some temporary loss of vegetation could occur during installation of bioengineered structures but would be replaced with native plants. The additional riparian vegetation would add more cover to the wasteway and keep water temperatures lower. Planting native vegetation would stabilize disturbed and eroding banks, enrich the stabilizing structures, and function as riparian habitat.

This alternative would also have unavoidable removal of some trees and vegetation along some reaches of the access road. The removal of trees and plants to build the access road would be an irretrievable loss.

Alternative 4 – Standard Engineering Only

A greater amount of vegetation would be lost under this alternative due to the nature of standard engineering techniques. Concrete revetments, riprap banks, and other standard engineering techniques offer the least possibility for restoring and increasing riparian vegetation along the wasteway. All vegetation would be removed from localized areas of the channel bank where standard engineering structures would be placed. No further significant vegetation loss would be expected once the stabilization efforts were complete. Those lengths of the wasteway with the greatest likelihood of continued erosion could be completely lined with these man-made structures.

This alternative would also have unavoidable removal of some trees and vegetation along some reaches of the access road and along the road paralleling the wasteway. The only standard engineering structures that would be built on the access road would comply with right-of-way restrictions stipulating installation of a ford crossing the wasteway and culverts at locations on the wetlands perimeter. The removal of trees and plants to build the access road would be an irretrievable loss.

Cumulative Effects

BLM's management of the Cascade Siskiyou National Monument ensures a high level of resource protection on BLM land and the surrounding area. Increasing development around the wasteway impacts vegetation resources as more people move in, build homes and roads, install wells and septic systems, and graze more cattle.

Doing nothing to prevent further loss of vegetation in and around the wasteway would cause the most damaging cumulative effects. The preferred alternative would reduce cumulative effects by involving BLM in discussions on site-specific stabilization efforts and providing a natural and effective solution that protects the vegetation resource. The preferred alternative would also stabilize the wasteway, thereby decreasing vegetation impacts that could be caused by runoff from the increasing development.

Mitigation

The wasteway stabilization effort would essentially mitigate for current adverse conditions. The design of the preferred alternative reduces the amount of cleared, unvegetated soils by using local native plant species for reseeding and revegetation.

Any trees cut for construction of the access road would be laid along the side of the access road for the landowner's use. Slash or debris created during construction of the road not used for wasteway bank stabilization would be burned, chipped, or buried onsite.

Fish and Wildlife

This section discusses fish and wildlife that potentially carry out life activities within the wasteway area based on life history traits and habitat requirements. Discussion of federally listed Endangered Species Act species is in the *Threatened and Endangered Species* section of this chapter.

Affected Environment

The wasteway lies high within the upper Rogue River basin and a few miles east of the Klamath-Siskiyou Ecoregion (KSE) boundary (figure 3-3). Riparian zones provide a complex habitat structure for a high degree of biologically diverse species. Habitat in the vicinity of the wasteway is well suited for a variety of animal life due to the combination of climate, geology, hydrology, and vegetation (Kauffman et al. 2001). The nearby KSE has exceptionally high species diversity. Where

documented animal life specific to the wasteway is lacking, the following discussion is based on known species found in the KSE.

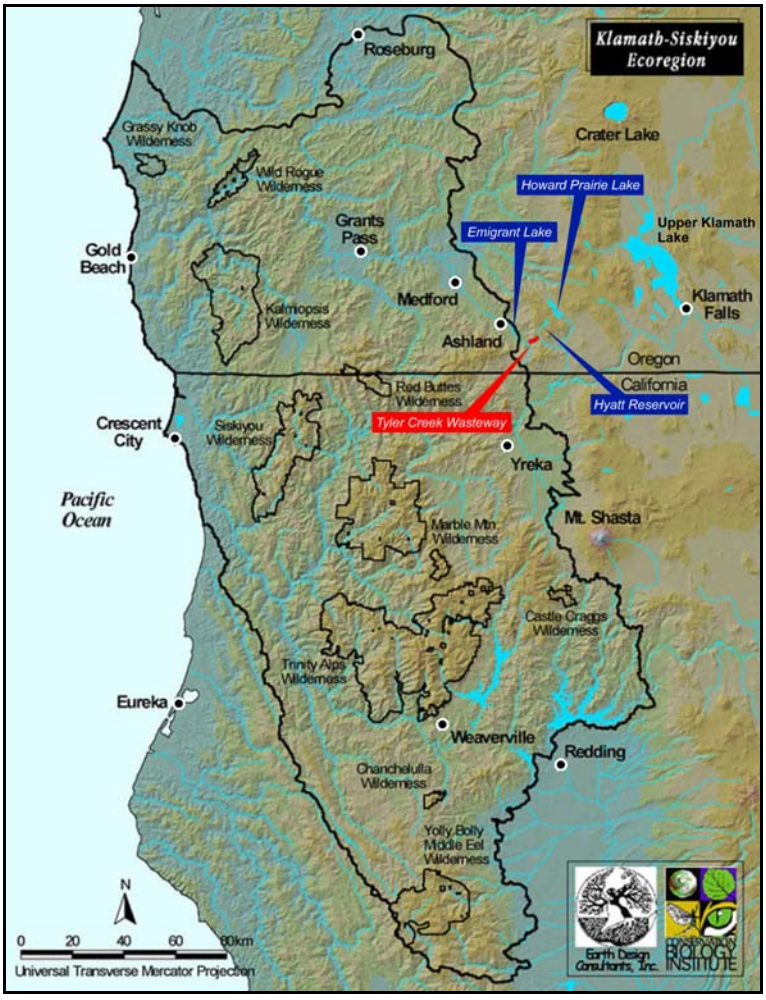

Figure 3-3. Tyler Creek wasteway in relation to Klamath-Siskiyou Ecoregion

Fish

Emigrant Dam restricts the natural migration of anadromous fish beyond the dam. Oregon Department of Fish and Wildlife stocks Emigrant Lake with hatchery rainbow trout and surplus hatchery summer and winter steelhead thereby giving them access upstream from Emigrant Lake into Emigrant Creek and its tributaries. During the infrequent periods of wasteway flow, these game species and nongame species, consisting of suckers, dace, and sculpins, could be present in the lower reach of the wasteway.

Amphibians and Reptiles

The KSE supports 38 native species of reptiles and amphibians (Bury and Pearl 1999). Several species are distributed within the northern and southern boundaries of the KSE but could extend beyond the eastern boundary. The overlap of these species accounts for much of the amphibian and reptile richness in the region (Bury and Pearl 1999). Amphibians have moisture requirements that

make proximity to water sources crucial to their survival and reproduction. Much of the upper wasteway channel (upstream from Schoolhouse Creek) is dry all or most of the year and is not likely to be occupied. However, occasional minor spring seepage pools in depressed areas scattered throughout the reach could have reptiles and amphibians. The lower wasteway channel (downstream from where the wasteway joins Schoolhouse Creek) has a more consistent water source from springs and precipitation and is likely to be occupied by the following species (Bury and Pearl 1999; FOG undated; Csuti et al. 1997):

> Northwestern salamander (*Ambystoma gracile*), long-toed salamander (*Ambystoma macrodactylum*), Pacific giant salamander (*Dicamptodon tenebrosus*), clouded salamander (*Aneides ferreus*), ensatina (*Ensatina eschscholtzii*), roughskin newt (*Taricha granulosa*), Western toad (*Bufo boreas*), Pacific tree frog (*Hyla regilla*), Cascades frog (*Rana cascadae*), Northern alligator lizard (*Elgaria coeruolea*), western rattle snakes (Crotalus viridis) rubber boa (*Charina bottae*), racer (*Coluber constrictor*), ring-neck snake (*Diadophis punctatus*), gopher snake (*Pituophis melanoleucus*), terrestrial garter snake (*Thamnophis elegans*), and the common garter snake (*Thamnophis sirtalis*).

Birds

Riparian habitat along the wasteway channel has the potential to support many bird species. Migratory birds breeding locally could find sufficient food, water, nest materials, and cover habitat along the wasteway to use during critical breeding and nesting periods of their life histories. The wasteway riparian habitat could also support wintering and resident species. Trail et al. (1997) provides a comprehensive list of breeding birds found in the KSE.

Mammals

Water in the wasteway channel is likely to attract several mammal species that would not normally remain close to the wasteway. A wide variety of mammals (particularly rodents, rabbits, mustelids, black-tailed deer, cougars, bats, raccoons, and many others) are likely to be present in the uplands adjacent to the wasteway. Some mammals, including shrews, could reside along the wasteway.

Environmental Consequences

Alternative 1 – No Action

The absence of preventative maintenance and bank stabilization would likely result in continued erosion of the wasteway. The potential for landslides and further erosion could worsen as would downstream water quality from an increase in suspended sediments. Increased sediment in streams can cause negative biological impacts. Sedimentation from the wasteway would likely settle out in Emigrant Creek or Ashland Lateral. Minimal levels of sedimentation may affect aquatic and semi-aquatic species. Upland species would not be affected.

No new vegetation would be planted. Shade and habitat in riparian zones would be dependent upon natural recolonization of plants on bare soils exposed by unstable, eroding banks. No trees would be

removed from the upland area where an access road might have been built under alternatives 2, 3, or 4.

Alternative 2 (Preferred Alternative) – Bioengineering Combined With Standard Engineering

Aquatic and semi-aquatic species would benefit from the preferred alternative because of potential water temperature and water quality improvements created by the planted vegetation. Better water quality in Emigrant Creek and Emigrant Lake would improve aquatic conditions for resident fish and other aquatic life.

Upland species would benefit from increased riparian vegetation which provides habitat and resources. Removing trees and herbaceous plants to build the access road would reduce some existing habitat. Human presence and the use of construction equipment could cause temporary localized disturbances to fish and wildlife.

Alternative 3 – Bioengineering Only

Alternative 3 would have the same benefits and impacts as the preferred alternative (alternative 2).

Alternative 4 – Standard Engineering Only

Standard engineering structures would prevent vegetation growth where the structures were placed and would reduce habitat for terrestrial, riparian zone, and semi-aquatic species such as song birds, salamanders, frogs, and shrews. The structures would immediately control erosion and reduce sediment and turbidity in the wasteway flow. Water quality, except temperature pollution, would improve. Human presence and the use of heavy construction equipment could cause temporary disturbances to riparian zone, aquatic, and semi-aquatic wildlife. Overall, this alternative would be the least beneficial to wildlife species because of loss of potential habitat resources.

Alternative 4 would have significant impacts on any fish populations inhabiting the lower reach of the wasteway because removal of streambank vegetation would increase water temperatures and reduce cover.

Localized lengths of the wasteway with the greatest likelihood of continued erosion could be completely lined with these man-made structures. This type of channelization would increase the flow velocity and is known to cause adverse environmental impacts to fish, the prey base for wildlife, and watershed systems.

Cumulative Effects

The preferred alternative would reduce cumulative effects by reducing erosion and improving water quality, thereby improving conditions for fish and wildlife. Stabilizing the wasteway would be done in concert with other efforts to preserve and protect local fish and wildlife species. Other land uses affecting terrestrial and aquatic habitats in the area would be unaffected by the preferred alternative.

Mitigation

Reclamation would use best management practices to mitigate environmental consequences caused by stabilizing activities or constructing the access road. All standard and reasonable precautions would be taken to reduce erosion during and after construction. Proper planning would produce efficiency and timely completion of construction activities with the least amount of people and heavy equipment working at any given time.

Threatened and Endangered Species

Reclamation requested information in March 2001 from NOAA Fisheries and USFWS on listed or proposed threatened and endangered plant and animal species that could be present in the proposed wasteway work area. The USFWS response indicated the Gentner's mission-bells (endangered), bald eagle (threatened), Northern spotted owl (threatened), and coho salmon Southern Oregon/Northern California Coast Evolutionarily Significant Unit (SONCC ESU) (threatened) could be present in the Rogue River Basin Project. NOAA Fisheries indicated threatened coho salmon could occur within the basin and directed Reclamation to their website in lieu of a written response. Reclamation requested updated species listings from USFWS in October 2001 and May 2003. The 2001 USFWS response included these same species; however, the 2003 USFWS response did not mention the coho salmon SONCC ESU. Attachment A contains copies of the species correspondence.

Gentner's Mission-Bells

Affected Environment

USFWS listed Gentner's mission-bells (*Fritilaria gentneri*) as an endangered plant species in December 1999 (USFWS 1999a) but has not yet published a recovery plan or designated critical habitat. The long-term vigor and viability of this species needs a breeding population greater than 500 plants. Total counts for this species barely exceed this number (USFWS 1999a).

Gentner's mission-bells is a perennial herb belonging to the lily family (*Liliaceae*). It has a fleshy bulb and a sturdy stem that grows 20-28 inches high. The stems and leaves have a blue-tinted waxy coating. The leaves are arrow-shaped, grow 3-6 inches long, and are often whorled. The bell-shaped flowers are 1.4-1.6 inches long and are reddish purple with pale yellow streaks. The flowers are solitary or in groups of up to five on long pedicels. The flowering season is from April to June; however, not every plant will flower each season. Many of the plants remain dormant for 1 to several years and will not produce above-ground stems and flowers. Reproduction occurs when bulblets break off and form new plants (USFWS 1999a).

Gentner's mission-bells is restricted to scattered locations within the Rogue and Illinois River drainages in Jackson and Josephine Counties in southwestern Oregon. Gentner's mission-bells grows in forest openings within three habitats: oak woodlands dominated by Oregon white oak, mixed hardwood forests dominated by Pacific Madrone, and coniferous forests dominated by Douglas-fir.

Gentner's mission-bells is found at elevations between 600 and 4450 feet (ONHP 2000a). Over half of the known occurrences of Gentner's mission-bells are found at elevations higher than 2400 feet (ONHP 2000a). Those occurrences below elevation 2400 feet are localized in a central cluster within a 30-mile radius of the Jacksonville Cemetery. The remaining plants exist as single individuals or occasional clusters widely distributed across the area. Landownership varies from the BLM's Medford District, the city of Jacksonville, Southern Oregon University, District 8 of the Oregon State Department of Transportation, and private individuals. Gentner's mission-bells do not inhabit cultivated cropland.

The Oregon Natural Heritage Program database indicates the closest Gentner's mission-bells are approximately 5 miles southeast of the wasteway in Soda Mountain Wilderness near upper Dutch Oven Creek drainage. The database does not identify any plants within the proposed work area (ONHP 2000a).

The principle threat to Gentner's mission-bells is habitat loss caused by both fire suppression and urban development. Oak woodlands within the Rogue River Basin Project area are becoming more thickly wooded and less grassy due to fire suppression to protect the increasing number of homes. Residential development makes prescribed burning difficult. Records indicate natural fires occurred every 12-15 years and these frequent, low-intensity fires maintained the open canopy normally found within oak woodlands. The transformation from a grassy understory to a shrub understory, along with a dense, closed canopy, is excluding Gentner's mission-bells (USFWS 1999a). Urban development within this centralized area is destroying Gentner's mission-bells habitat at a rapid rate. (USFWS 1999a).

Environmental Consequences

Alternative 1 – No Action

There is no demonstrated or known presence of Gentner's mission-bells in the wasteway area nor does the wasteway area provide essential or suitable habitat for this species. Therefore, the No Action alternative would not affect this species.

Alternative 2 (Preferred Alternative) – Bioengineering Combined With Standard Engineering

There is no demonstrated or known presence of Gentner's mission-bells in the wasteway area nor does the wasteway area provide essential or suitable habitat for this species. If any plants were found, Reclamation would avoid any activities that would negatively impact individuals and their habitats. The preferred alternative would, therefore, have no effect on this species.

Alternative 3 – Bioengineering Only

This alternative would result in similar effects as the preferred alternative. However, temporary and long-term sedimentation from the wasteway would be reduced even more than in the preferred alternative. There would be no effect on Gentner's mission-bells.

Alternative 4 – Standard Engineering Only

This alternative would have the greatest potential to alter habitats and create disturbance in the wasteway work area. However, as discussed under the preferred alternative, these actions would have no effect on Gentner's mission-bells.

Bald Eagle

Affected Environment

USFWS currently lists the bald eagle (*Haliaeetus leucocephalus*) as threatened in the 48 contiguous states. The historic distribution of bald eagles included most of the North American continent. The widespread use of organochloride pesticides contributed to a steep decline in reproduction from 1947 to 1970 (USFWS 1986). Habitat degradation, illegal harassment and disturbance, poisoning, and a reduced food base also contributed to the decline. By 1978, the bald eagle was federally listed as a threatened species in five states and as an endangered species in the remaining 43 states. USFWS (1986) approved a bald eagle recovery plan for the Pacific Recovery Region. Bald eagle populations have increased steadily since its ESA listing as threatened. The improvement is a direct result:

- of bans on DDT and other persistent organochloride pesticides
- habitat protection
- a growing public awareness of the bald eagles' plight.

Due to the overall population increase, USFWS (1995a) reclassified the bald eagle from endangered to threatened in the continental states. The number of bald eagles in the Pacific Recovery Region is five times what it was when the recovery plan was written (USFWS 1999b).

Bald eagles need suitable habitat and a prey base to thrive and reproduce. Suitable habitat includes, but is not limited to, large nesting and perching trees which are subject to minimal disturbance by humans, especially during the breeding season (January through mid-August). Eagles forage over large, open bodies of water by catching fish in their powerful talons or by stealing fish caught by Osprey. Their large size and long wingspan would make hunting in forest or dense woodlands difficult. Eagles prey primarily on fish, but will also consume birds, mammals, and carrion.

Two bald eagle nesting territories are in the vicinity of the proposed work area. One nest is approximately 2 miles southwest of Emigrant Lake and about 6 miles west of the wasteway. The other is situated close to the Hyatt Reservoir shoreline about 5 miles northeast of the wasteway. Both nests are closer to their respective reservoirs than to either the wasteway or Schoolhouse Creek. The large, open-water, fish-stocked Emigrant Lake and Hyatt Reservoir would attract eagles occupying these nesting territories. In recent years, both of these nesting territories have fledged eaglets (Isaacs and Anthony 2002).

Creeks within the proposed work area are relatively small and enclosed with canopy cover that makes it difficult for bald eagles to locate, pursue, and capture live prey.

Environmental Consequences

Alternative 1 – No Action

No bald eagle nests currently exist in the proposed work area. The habitat is unsuitable for this species' life history, making it unlikely a nesting territory would be established in the proposed work area. The only potential presence of bald eagles would be occasional migrants passing over the area. Continued sediments and nutrients from wasteway erosion may occasionally diminish water quality in Emigrant Lake, and in turn, may affect fish prey populations used by the resident nesting eagles and winter migrants. However, these occasional episodes are not likely to alter or limit the fish populations to a significant degree. This alternative would have no effect on bald eagles.

Alternative 2 (Preferred Alternative) – Bioengineering Combined With Standard Engineering

No bald eagle nests currently exist in the proposed work area. The habitat is unsuitable for this species' life history, making it unlikely a nesting territory would be established in the proposed work area. The only potential presence may be from occasional migrants passing over the area.

Brief periods of increased turbidity have the potential to temporarily diminish water quality in the proposed work area if water is present. Work would be timed to occur when the wasteway is dry; however, rain, runoff, and emergency wasteway use cannot be predicted. If any of these events coincide with stabilization activities or access road construction, some sediments could be carried downstream to Emigrant Lake and temporarily affect prey fish populations.

Overall, the preferred alternative would result in a permanent reduction in wasteway sediments reaching Emigrant Lake. Therefore, this alternative would not affect bald eagles.

Alternative 3 – Bioengineering Only

Like the preferred alternative, this alternative would not affect bald eagles.

Alternative 4 – Standard Engineering Only

Like the preferred alternative, this alternative would not affect bald eagles.

Northern Spotted Owl

Affected Environment

USFWS listed the northern spotted owl (*Stix occidentalis caurina*) as threatened under ESA on July 23, 1990, and designated critical habitat in January 1992. Oregon lists this species as a State threatened species. The primary reason for the northern spotted owl population decline is loss and fragmentation of habitat due to timber harvest (USFWS 1995b). USFWS published guidelines in their Northwest Forest Plan adopted in 1994 for timberland management within the northern spotted owl range; however, a final northern spotted owl recovery plan has not been published.

Northern spotted owl habitat occurs in mountainous areas with old growth forest characterized by multilayered canopy and uneven-aged stands with overstory trees ranging in age from 230-600 years old (Marshall et al. 1996). The owls nest in cavities or on platforms created by abandoned raptor nests, squirrels nests, debris accumulations, and mistletoe brooms (Marshall et al. 1996). Northern spotted owls are primarily nocturnal predators of small mammals such as northern flying squirrels, woodrats, and red tree voles (Marshall et al. 1996, USFWS 1995b).

Over 150 northern spotted owl breeding territories exist near Rogue River Basin Project (ONHP 2000b). However, northern spotted owls do not forage on fish or other aquatic species that would attract them to project reservoirs nor do they depend on habitat provided by project facilities. Most of the breeding territories are above elevation 3500 feet in mature or old growth forest.

Two northern spotted owl critical habitat units (OR-37 and OR-38) occur within the Rogue River Basin Project area (Arnold 2001). One of these critical habitat units is near Hyatt Reservoir and Howard Prairie Lake under BLM management. The other is near Fish Lake under U.S. Forest Service management. Neither of these units falls within the wasteway work area. No northern spotted owl activity centers occur within 2 miles of the wasteway in any direction according to BLM Ashland Resource Area data on spotted owl activity centers (Arnold 2002).

Environmental Consequences

Alternative 1 – No Action

There is no suitable habitat for breeding or foraging for the spotted owl in the wasteway area. The only potential presence may be occasional migrants through the area. Continued sediments and nutrients from wasteway erosion may occasionally diminish the water quality. However, it is expected that these occasional episodes would not affect northern spotted owl populations.

Alternative 2 (Preferred Alternative) – Bioengineering Combined With Standard Engineering

There is no suitable habitat for breeding or foraging for the spotted owl in the wasteway area. The only potential presence may be occasional migrants through the area. Construction of the access road and wasteway stabilization structures could temporarily increase turbidity of any water flowing through the wasteway during construction. The resulting sediments and nutrients may temporarily diminish the water quality. However, it is expected that neither this temporary episode or construction activities would affect this species.

There would be an overall permanent reduction of sediments and nutrients as a result of the preferred alternative. This alternative would reduce harmful effects but would have no effect on northern spotted owl populations.

Alternative 3 – Bioengineering Only

This alternative would result in similar effects as the preferred alternative. However, temporary and long-term wasteway sedimentation would be reduced even more than in the preferred alternative. There would be no effects on spotted owls.

Alternative 4 – Standard Engineering Only

This alternative would have the greatest potential to alter habitats and create disturbance in the wasteway work area. However, as discussed under the preferred alternative, these actions would have no effect on spotted owls. The temporary effects of construction would be overshadowed by the long-term benefits of reduced sedimentation and nutrients to the downstream and Emigrant Lake ecosystems. Therefore, as explained for the preferred alternative, this alternative would not affect spotted owls.

Southern Oregon/Northern California Coasts ESU Coho Salmon

Affected Environment

Coho salmon (*Oncorhynchus kisutch*) are anadromous and semelparous. Coho salmon spend approximately the first half of their life cycle rearing in streams and small freshwater tributaries. The remainder of the life cycle is spent foraging in estuarine and marine waters of the Pacific Ocean prior to returning to their stream of origin to spawn and die (NOAA Fisheries 2002).

NOAA Fisheries (1997) listed the SONCC ESU as threatened on May 6, 1997, due to the extreme population loss and then published a final rule (NOAA Fisheries 1999) effective June 4, 1999, designating critical habitat for SONCC ESU that includes Bear Creek and its tributaries downstream from Emigrant Dam. Emigrant Dam prevents passage of anadromous fish into upper Emigrant Creek, Tyler Creek, Schoolhouse Creek, and the wasteway. The effects of the preferred alternative would not continue downstream from the dam. Therefore, consultation on this species is not required.

Environmental Consequences

Since Emigrant Dam prevents passage of anadromous fish into river reaches upstream from the dam, there is no demonstrated or known presence of coho salmon in the wasteway area. Continued sediments and nutrients from wasteway erosion may occasionally diminish the water quality in Emigrant Lake. However, these occasional episodes would not alter the downstream coho salmon population. None of the four alternatives would affect coho salmon.

Species Comparison Table

Table 3-2 summarizes the effects the alternatives would likely have on the federally listed threatened or endangered species.

Table 3-2. ESA Species Effects

	Alternative 1 No Action (baseline for comparison)	Alternative 2 Preferred Alternative Bioengineering Combined With Standard Engineering	Alternative 3 Bioengineering Only	Alternative 4 Standard Engineering Only
Gentner's mission-bells	no effect	no effect	no effect	no effect
Bald eagle	no effect	no effect	no effect	no effect
Northern spotted owl	no effect	no effect	no effect	no effect
Coho salmon	no effect	no effect	no effect	no effect

Cumulative Effects

The alternatives would have no effect on the four federally listed species. Cumulative effects are, therefore, not an issue.

Mitigation

None of the alternatives would be expected to adversely affect the four federally listed threatened and endangered species; therefore, no mitigation is needed.

Historic Properties

Affected Environment

Historic properties include prehistoric and historic archeological sites, buildings, and historically important places eligible for inclusion in the National Register of Historic Places. Historic properties are also places of special heritage value to contemporary communities (often, but not necessarily, Indian communities) because of their association with cultural practices or beliefs important in maintaining the cultural identity of that community.

Early Occupation of Southwest Oregon

Limited archeological evidence exists for occupation of southwestern Oregon prior to around 6,500 years before present (BP). Available evidence indicates populations from that time until about 2,250 BP were groups of highly mobile hunter-gatherers who moved with some seasonal regularity through a territory to obtain food and raw materials. Groups seem to have become less mobile through time, centering their seasonal movements around semi-permanent base camps and placing greater reliance on riverine resources. By 2,250 BP, groups seem to have maintained permanent villages from which members traveled to collect resources.

The Takelma, Molala, and Shasta tribes were living in southwestern Oregon by the time Euro-American's entered the area. Recent analysis suggests the Latkawa Takelma occupied much of the valley, while Shasta territory extended north only as far as modern Ashland. Since both tribes have place names and stories for Bear Creek valley locations, it is likely their territories overlapped in this area. Takelma and Shasta lifeways appear to have been broadly similar. Both lived in relatively permanent villages much of the year. These villages were located on terraces along principal rivers, often at the confluence of tributaries or near economically important resource locations. Small family groups traveled in a predictable pattern from those villages to various places from late spring to fall to obtain seasonally available food. Plant foods contributed the bulk of the daily diet, with acorns and camas being dietary staples. Fishing, especially for salmon, was a significant economic and social activity, although hunting supplemented the diet.

Euro-Americans first entered the area in 1826-1827. The Rogue River and Bear Creek valleys became a primary travel route between Oregon and California during the 1830s. Gold was discovered in 1851 near what became the city of Jacksonville, Oregon. Miners and other settlers flocked to the area bringing disease and driving the Indian people from their lands. The upper Rogue River Indian groups signed a treaty in 1853 establishing a reservation northwest of Medford. Attacks on the Indians in 1855 caused many to leave the reservation to fight. The fighting ended in 1856. The reservation was then abolished and the Indians who had survived disease and warfare were forced to relocate to reservations elsewhere in Oregon.

Existing Wasteway and Access Right-of-Way Conditions

The area of considerable erosion caused Reclamation to reroute released flows into a second natural intermittent stream channel which then returns the water to the original wasteway channel. This area is wooded, and fallen leaves and duff obscure the ground surface. Similar conditions are present along the wasteway channel upstream from the area of considerable erosion, while downstream, there is a mixture of wooded areas and open fields. Visibility is limited in all areas due to duff or grasses.

The first 1,000 feet of the access road right-of-way corridor crosses land that is used for agricultural purposes, and where no roadway presently exists. Grass (planted pasture or hay) is thick in this area. Schoolhouse Creek and several shallow, ephemeral surface drainages cross this segment of the right-of-way. The last 700 feet of the right-of-way corridor extend through woods where timber harvesting has occurred, and there is an abandoned roughly graded vehicle trail. Fallen leaves and duff obscure the ground in this wooded area.

Archeological Investigations

In October 2000, Reclamation contracted with Heritage Research Associates, Inc., (HRA) for an intensive pedestrian archeological survey of lands that would be impacted by the proposed project as defined at that time. In addition to the survey, HRA was to dig exploratory shovel probes in specified areas. The survey and exploratory probing methods and results are reported in HRA Report No. 238 (Oetting 2000), and are summarized below.

The archeological survey covered the area of considerable erosion and its access, including:

- the channel immediately upstream from the eroded area
- the eroded area, where stabilization would occur
- the second channel used to reroute released water around the area of considerable erosion
- the land between the two channels
- the entire right-of-way corridor for the access road

Survey methods used in the wasteway area varied depending upon ground conditions. The area between the two channels was surveyed at 10 meter (32 foot) intervals. Along the two channels, the survey extended 10 meters back from the bank, beyond the area that might be disturbed by either future erosion or bank stabilization actions. At both the wasteway channel upstream from the area of considerable erosion and at the rerouted channel, HRA surveyed with one archeologist walking in the channel examining the channel banks, while two archeologists surveyed the ground above the bank. At the area of considerable erosion, survey was confined to the ground beyond the eroding edge as it was unsafe to walk inside that section of the channel. The access road right-of-way corridor was walked at 5 meter (16 foot) intervals. One sparse scatter of prehistoric artifacts (later designated as site 35-JA-492) was identified during the survey.

Visibility was relatively poor (10 to 20 percent) throughout the survey areas due to thick grass or from leaf or duff cover. Reclamation's survey contract with HRA required that they dig exploratory shovel probes when there was poor surface visibility at locations where there might be construction disturbance. They were also required to probe a specific section of the access corridor parallel to a location where a landowner reported finding archeological material on his property about 150 feet outside of the road corridor. HRA excavated 15 site discovery shovel probes. Each was 30 cm (12 in) in diameter, was excavated in 10 cm (4 inch) levels, and all fill was screened through 1/8-inch mesh. HRA placed probes at the following locations:

- two along the wasteway where stabilization would occur
- two in the specified section of the access corridor parallel to the reported archeological site
- five where road culverts would be installed
- four at a location where environmental conditions indicated a site might be present but hidden by vegetation, and
- two near where the sparse artifact scatter (site 35-JA-492) had been recorded.

The probes identified two additional prehistoric material scatters (sites 35-JA-293 and 35-JA-494). All three recorded sites were located within the access road corridor on privately owned land. Further test excavations were needed to determine the character and physical integrity of the sites. In Oregon,

a State permit must be obtained before completing archeological test excavations on private land. Therefore, once HRA determined these locations were indeed archeological sites, they halted subsurface examination until a State permit could be obtained.

The State Historic Preservation Office (SHPO) issued a State permit (number AP-477) to HRA in June 2002 for test excavations, and HRA completed the test excavation the next week. Consistent with Reclamation's specification, test excavations were limited to the portion of each site located within the 60-foot-wide right-of-way corridor. The methods used and test excavation results are reported in HRA Report No. 258 (Oetting 2002). The following summarizes the site findings from all phases of investigation.

Site 35-JA-492 is a lithic scatter site located in the northern portion of the road access corridor. The site was discovered during the site survey, and two probes were excavated at that time, followed in 2002 by more extensive test excavation. A small quantity of waste flakes and two flaked stone tools were found scattered on the surface across a 25 by 30 meter area. The tools were a chert narrow-necked projectile point mid-section fragment, and a large basalt used flake. Enough remained of the point fragment to demonstrate that it was a narrow-necked style commonly used during the last 2,200 years. Test excavations yielded very little additional cultural material. Subsurface materials were largely confined to a very small area consistent with the surface artifact concentration, and all material was confined to the top 10 cm of soil. Except for the two tools noted on the surface, all materials found were unmodified chert, obsidian, or basalt flakes, and most were small interior specimens. No features were noted. The site was assessed to be a low-density surface artifact scatter with little potential to yield additional information.

Site 35-JA-493 is located on a small terrace. No surface material had been found at the site location during survey. However, since it seemed to be an area where a site might be expected to occur and the grass cover was very dense, HRA excavated two discovery probes to test subsurface soils. One of the probes yielded two flakes in the top 10 cm. The ground surface in that immediate area was then inspected on hands-and-knees, and a small number of additional flakes was found in small bare spots near a bedrock outcrop. Test excavations in 2002 indicated that, at least within the right-of-way, the site is a rather sparse lithic scatter with most of the material confined to the surface and top 20 cm of soil. Only lithic debitage and two square nails were found. The flakes were chert and obsidian, and most were interior specimens 1 to 2 cm in size. The two square nails do not appear to be associated with an identifiable early historic period feature within the right-of-way. The site appears to have been disturbed by plowing in the past. Site deposits within the right-of-way were assessed to have little potential to yield significant information that would increase our understanding of prehistoric life in the area or region. It is possible that the tested area may represent the west edge of a larger site, but that area lies beyond the right-of-way corridor and Reclamation's proposed work area.

Site 35-JA-494 is located in the south half of the road corridor. No surface evidence of a site had been found during survey. However since this section parallels the archeological site reported about 150 feet outside the corridor, two discovery probes were excavated in the area. Both probes yielded interior flake specimens 1 to 2 cm in size. Intensive examination of the surface then occurred near the probes, but no additional materials were found. The grass is extremely dense in the area, with no bare spots. Extensive additional testing was completed in 2002. Testing revealed much more cultural

material, extending to a greater depth. However, again the material was essentially limited to unmodified lithic debitage – 236 flakes were recovered, one core, one biface fragment, and one animal bone fragment. There was no evidence of features, either prehistoric or historic period in origin. Also, the site appeared to be rather disturbed. Test units revealed mottled soils indicating that leveling or soil redistribution has occurred at the site. This interpretation is supported by discovery of a glass fragment between 10 and 20 cm below surface and a button between 30 and 40 cm below surface. Material density and distribution indicates that this site may extend well beyond the area tested within the right-of-way corridor. It is possible that those untested areas have historically significant deposits. However, it was determined that deposits within the right-of-way have limited physical integrity and lack the kind and variety of materials that could provide significant new information about area history or prehistory.

In September 2002, Reclamation initiated consultations with the SHPO and interested Indian tribes about the eligibility of site deposits within the right-of-way corridor for listing on the National Register of Historic Places (National Register). Tribes notified were the Cow Creek Band of the Umpqua Tribe of Indians, the Confederated Tribes of the Siletz Indians, the Klamath Tribes, and the Confederated Tribes of the Grand Ronde Community of Oregon (the Grand Ronde Tribes). On October 17, 2002, the SHPO indicated they concurred with Reclamation's determination that the deposits within the right-of-way were not eligible to the National Register. Attachment B contains a copy of this correspondence.

In a letter dated October 28, 2002, (attachment C) the Grand Ronde Tribes indicated they believe the sites were culturally significant, and that materials might be discovered during ground disturbing actions. They requested notification in the event of any discovery. No other tribe responded. Reclamation considered the Grand Ronde Tribes' response, and retained the determination that the site deposits within the right-of-way are not eligible to the National Register.

In June 2002 while completing the test excavations, HRA conducted an archeological survey of the wasteway downstream from the area of considerable erosion. The survey began near the confluence of the wasteway with Schoolhouse Creek and extended downstream to the confluence of Tyler Creek with Emigrant Creek. Within this reach, HRA examined an area extending approximately 100 feet to each side from the wasteway's centerline. HRA recorded three isolated finds (IF):

- a section of a wooden flume (IF-1)
- an artifact scatter (IF-2)
- an isolated artifact (IF-3).

IF-1 clearly lies beyond the potential work area and, therefore, will not be considered further in this EA. IF-2 consisted of four flakes and one fire-cracked rock scattered over a 10 by 20 meter area on a terrace about 5 meters from the creek bank. IF-3 was a single chert flake about 20 meters from the creek bank on a bench that appears to have been leveled and plowed in the past.

In June 2003, HRA conducted an archeological survey approximately 100 feet wide centered on the wasteway's centerline and upstream from the area of considerable erosion. No prehistoric sites or isolated finds were recorded, and there appears to be little likelihood of undetected prehistoric sites.

One scatter of 20th Century trash was found, consisting of sheet metal and a cable. It does not appear to be an historically significant site (Oetting 2003).

HRA also completed limited shovel testing at the locations of IF-2 and IF-3 by excavating a line of 50-cm-diameter test holes about 20 feet from the bank's edge. This indicated that archeological sites are present at both sites (Oetting 2003). Both sites are on private land; therefore in conformance with State law, the shovel testing was halted as soon as it was clear that archeological sites were present. Reclamation does not anticipate completing further investigations at these sites, since no ground disturbing actions are proposed in the area, and the creek appears to carry the flow without causing erosion.

Environmental Consequences

Alternative 1 – No Action

Continued wasteway channel erosion would have no effect on historic properties upstream from or within the area of considerable erosion, as no sites were found there. It appears unlikely that using the creek as a wasteway would impact IF-2 or IF-3 since no cultural material was visible in the streambank and the bank does not appear to be actively eroding at either site (Oetting 2003).

There would be no effect to the three archeological sites identified in the access road right-of-way since Reclamation would not construct the access road under the No Action alternative.

Alternative 2 (Preferred Alternative) – Bioengineering Combined With Standard Engineering

Ground disturbing actions associated with wasteway bank stabilization in the area of considerable erosion or along the wasteway upstream from that area would have no effects on historic properties, as no sites were found in those sections of the wasteway.

Sites 35-JA-492 and 35-JA-493 both lie near areas where ground disturbance would occur during wasteway access construction. Associated excavation may extend into site deposits within the right-of-way. If construction excavation occurs within those sites, archeological deposits would be destroyed. Construction actions in the vicinity of 35-JA-494 would be limited to sinking several post holes to allow installation of a gate. Use of the unimproved access route would occur within the right-of-way across all three sites. Reclamation would drive over the unimproved ground surface only during dry-weather conditions as stipulated in the right-of-way agreement. Standard vehicles or farm equipment already drive over this land. Therefore, Reclamation's dry-weather use of the access would not cause further damage to the landscape or the resources on that land.

The National Historic Preservation Act holds Federal agencies accountable for impacts to historic properties that are eligible to the National Register. The portions of all three sites within the right-of-way corridor have been determined in consultation with the SHPO to be not eligible to the National Register. Therefore under National Historic Preservation Act, there is no effect to these sites from the

preferred alternative, even if damage occurs to site deposits within the corridor. Attachment B contains SHPO's concurrence with Reclamation's findings.

The creek channel in the vicinity of sites IF-2 and IF-3 is well incised and eroded to basal cobbles. It is stable and appears to have the capacity to carry flows without triggering bank erosion. No cultural features or materials were exposed in the banks. No further investigations are proposed at these site locations. Therefore, continued use of the creek channel as a wasteway appears unlikely to impact archeological deposits at IF-2 and IF-3.

Alternative 3 – Bioengineering Only

Impacts would be the same as for the preferred alternative (alternative 2).

Alternative 4 – Standard Engineering Only

Impacts would be the same as for the preferred alternative (alternative 2).

Cumulative Effects

The three archeological sites impacted by access improvements are located on private property. Two of the sites have clearly been used and appear to still be used for agricultural purposes (pasture and/or hay). The third site has had past timber harvest. The landowner retains the right under Reclamation's easement to personal use of the access road corridor. This might include grazing, harvesting crops, or driving the route with his own vehicles to access his land. These potential impacts would occur under all four alternatives. Preferred alternative actions taken to minimize potential impacts would also minimize cumulative effects.

Mitigation

No mitigation would be necessary for continued use of the wasteway or for stabilization under any of the action alternatives (2, 3, or 4). No historic properties were found near or upstream from the area of considerable erosion. Using the wasteway is not impacting deposits at IF-2 or IF-3 and is unlikely to do so in the reasonably foreseeable future.

No mitigation would be necessary for road access improvements or use, as the portions of the three archeological sites within the right-of-way corridor were determined to be not eligible to the National Register. However, Reclamation does commit to several actions with the objective of minimizing impacts to the site deposits. Minimizing efforts are appropriate because the deposits within the corridor are segments of larger sites and because the Grand Ronde Tribes indicated the sites have cultural significance for their tribe. Actions to minimize potential impacts are:

- monitor initial soil excavation at site 35-JA-493 to ensure immediate detection in the unlikely event of discovery of potentially significant subsurface deposits that were not revealed during test excavations
- align the access road route across 35-JA-493 and across the west side of the right-of-way
- align the access road route across 35-JA-494 and across the east side of the right-of-way

If test excavations reveal that IF-2 or IF-3 is eligible to the National Register, and if on-going use of the wasteway channel is damaging those sites, Reclamation would use a stabilization method in that area to have the least impact to site deposits. If sites are found elsewhere along the channel, this same strategy would be applied. Determinations of eligibility, impact, and stabilization method would occur in consultation with the SHPO and interested tribes.

Reclamation would also comply with National Historic Preservation Act concerning discovery situations. If any archeological sites other than 35-JA-494, 35-JA-493, and 35-JA-494 were encountered during construction, work would halt immediately in the area of the find and a Reclamation archeologist would be notified. Also, if unanticipated deposits were found within the boundaries of the three recorded sites that appear to be of the quality to meet eligibility criteria for the National Register, work would also halt in that location and a Reclamation archeologist would be notified. Reclamation would make an initial assessment of the discovery, and if warranted, notify the SHPO and interested tribes and reinitiate site evaluation actions. Reclamation would also comply with requirements of State of Oregon burial laws if human remains were encountered. This would include an assessment of whether the remains are Indian or Euro-American in origin, and tribal notifications and consultations if they are of Indian origin.

Indian Sacred Sites

Affected Environment

Executive Order 13007 defines Indian sacred sites as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion." The provisions of Executive Order 13007 apply only to Federal lands. More than half of the length of the wasteway is on private lands to which traditional practitioners have no access.

Environmental Consequences

Reclamation has not yet consulted with tribes on the potential for sacred sites being located on Federal lands within the proposed work area. Should any areas on Federal land be identified as needing wasteway stabilization, Reclamation would notify tribes and ask if they have any issues. At this time, Reclamation cannot determine if sacred sites would be affected.

Indian Trust Assets

Indian trust assets (ITA) are legal interests in property held in trust by the United States for Indian tribes or individuals. Examples of ITA's are lands, minerals, hunting and fishing rights, and water rights. The United States has trust responsibility to protect and maintain rights reserved by or granted to Indian tribes or individuals by treaties, statutes, and executive orders. Reclamation policy is to

protect ITA's from adverse impacts of its programs and activities and to enable the Secretary of the Interior to fulfill responsibilities to Indian tribes.

Affected Environment

No Indian owned lands, federally recognized Indian reservations, or ceded lands have been identified within the work area where traditional use rights (such as hunting, fishing, and gathering) are retained by any federally recognized Indian tribe.

Environmental Consequences

None of the four alternatives would impact ITA's.

Cascade Siskiyou National Monument

President Clinton signed a proclamation June 9, 2000, creating the 52,947-acre Cascade Siskiyou National Monument in south central Oregon. BLM designated the area as an Ecological Emphasis Area in its 1994 Northwest Forest Plan and its 1995 Resource Management Plan because of the unique ecological and biological characteristics (Clinton 2002). A portion of the wasteway lies within the monument as shown on figures 1-2, 1-4, and 3-4.

The monument, 25 miles southeast of Medford along the Oregon/California border, includes Soda Mountain and surrounding lands at the intersection of three ecological regions: Coast, Klamath, and Eastern Cascade slopes. The designation protects the extraordinary ecological value of these regions and their associated flora and fauna from resource exploitation and habitat degradation. It also places a permanent timber harvesting moratorium on the area.

Species from each ecological region meet and mix in the diverse habitats provided by the area's unique combination of biological, geological, hydrological, climatological, and topographical features. The monument is home to a variety of rare species of plants and animals whose survival in this region depends upon its continued ecological integrity. The area supports an exceptionally high diversity of fauna, including one of the highest diversities of butterfly species in any area of the United States. The area also contains old-growth habitat crucial to the threatened Northern spotted owl.

The area contains both public Federal lands managed by BLM and numerous private land holdings. The Presidential proclamation gave BLM 3 years to develop a management plan for the area. The guiding principles for managing the monument are to protect, maintain, restore, and enhance relevant and important resources. BLM currently manages the monument under an interim management policy. Much of the private land has historically been managed for commercial purposes such as grazing and timber harvest (Boise Cascade 2002). Grazing continues while BLM studies whether continued livestock use is compatible with the protective purposes of the monument (Clinton 2002).

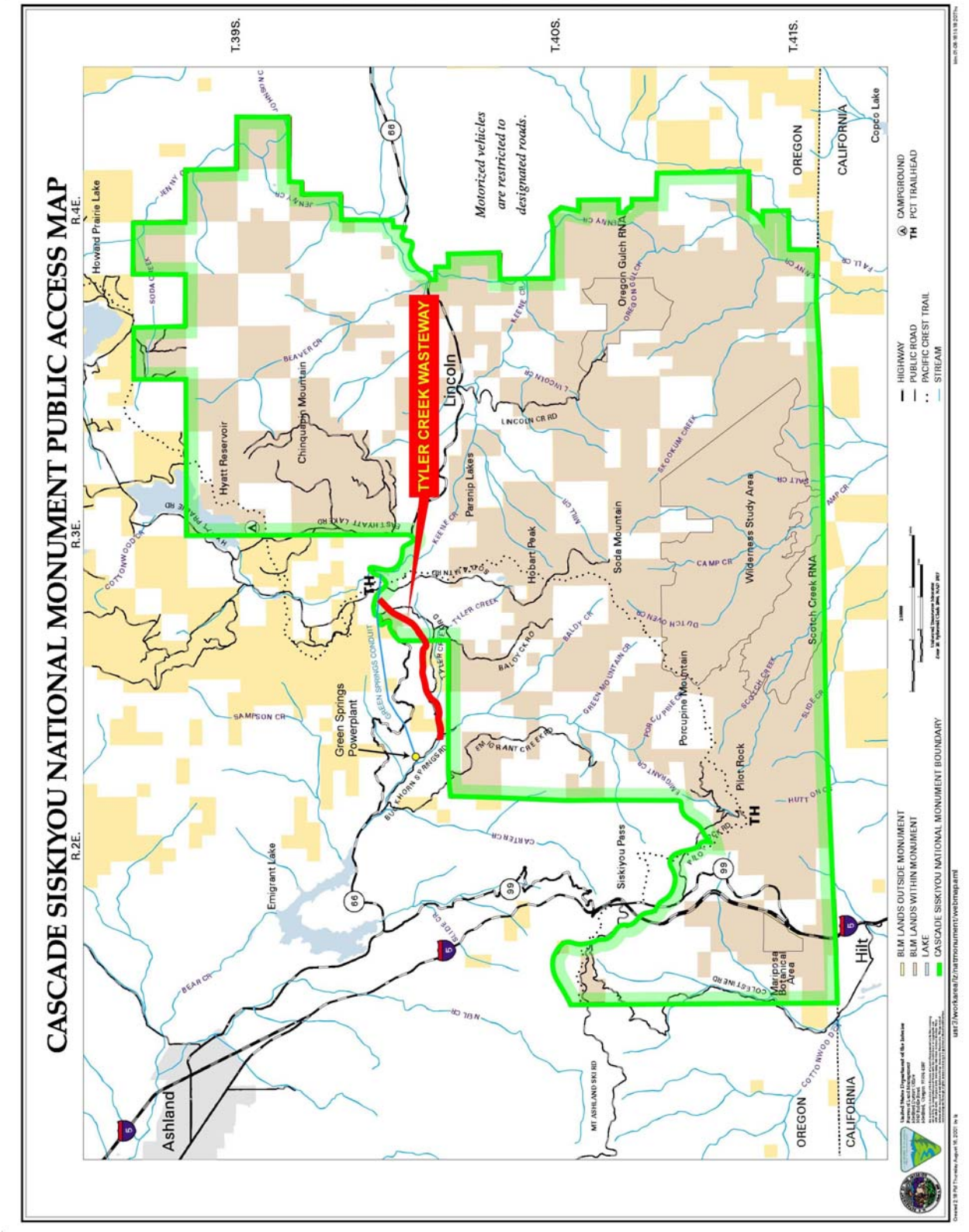

Figure 3-4. Wasteway in relation to Cascade Siskiyou National Monument

Environmental Consequences

Reclamation will continue cooperating with BLM to ensure its actions are in agreement with monument management goals. Any Reclamation actions would have the same environmental consequences whether within the monument or outside monument boundaries. Environmental consequences are therefore discussed under the headings of each specific natural resource (e.g. vegetation, water quality, etc.).

Cumulative Effects

Although the BLM management plan would apply only to the Federal lands within the monument, it raises numerous questions regarding the private lands within the monument; i.e., access, grazing, private forestry, and resulting social and economic impacts. It also raises concerns about increased wildfire risk to adjacent private lands from passive management of overstocked forests within the monument (Boise Cascade 2002). Jackson County Commission formed a citizen's advisory council which recommended substantially reducing the size of the monument in response to concerns of private property owners.

The preferred alternative would not add to the cumulative effects. Implementation of alternatives 2 (the preferred alternative) or 3 would be in agreement with BLM's management plan.

Mitigation

Mitigation discussion is under the headings of each specific natural resource (e.g. vegetation, water quality, etc.) since mitigation within the monument would be no different than outside monument boundaries.

Environmental Justice

The 1994 Presidential Executive Order 12898 (EO) mandates Federal agencies to identify and address any impacts their actions would have on environmental justice with regard to human health as well as social and economic issues. The EO identifies environmental justice as "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." The EO is designed to protect minority and low-income communities from discrimination of a disproportionately more hazardous or degraded human environment being imposed by a Federal action. It also emphasizes that Federal agencies provide minority and low-income communities with an opportunity for public participation and access to information relating to human health or the environment.

Affected Environment

The wasteway is in a rural and predominately white community (as shown in table 3-3) in Jackson County, Oregon. The county's population increased by 23.8 percent from 1990 to 2000. This growth rate is slightly higher than the State's overall population growth.

Table 3-3. 2000 Jackson County, Oregon, Census Statistics

U.S. Census Bureau 2000 Statistic	Jackson County	Oregon State
Total population	181,269	3,421,399
Population Percentage of Change (1990 to 2000)	23.8	20
White	91.6	86.6
Hispanic or Latino	6.7	8
American Indian or Alaska Native	1.1	1.3
Asian	0.9	3
Black or African American	0.4	1.6
Native Hawaiian or Pacific Islander	0.2	0.2
Other races	2.9	4.2
Persons below poverty	13.8	11.6
Children below poverty	20.3	16.3

The expanding human population along the wasteway has increased water usage. The number of property subdivisions and wells along the wasteway has increased since 1960. Human environmental consequences to the local area have also increased.

Environmental Consequences

None of the four alternatives would cause disproportionately adverse social, economic, or human health impacts to local minority or low-income populations, therefore, mitigation would not be required.

Chapter 4 — Consultation and Coordination

Chapter 4 — Consultation and Coordination

This chapter summarizes the wasteway consultation and coordination efforts required by law. Attachment D contains a list of agencies, organizations, and persons receiving a copy of this draft EA.

Public Involvement

Reclamation began working with local landowners, TID, and other stakeholders in the early 1990s concerning erosion damage in the wasteway. Reclamation entered into a right-of-way agreement and acquired a 60-foot-wide easement across private property for easier access to the wasteway from Tyler Creek Road (figure 1-2).

The NEPA scoping process officially began with an April 6, 2001, letter to over 100 potentially interested individuals, organizations, and local media. The letter provided basic Rogue River Basin Project background information, relevant history into events leading to the proposed action, and requested assistance in identifying environmental issues and concerns associated with access to and stabilizing the wasteway. An April 9, 2001, news release to local media also announced a 30-day public comment period. Public interest in commenting on the proposed action resulted in a 2-week extension of the comment period. Reclamation received eight letters from the public during that time; many comments were beyond the purposes of and need for action and outside the scope of this EA. Reclamation determined from the responses that the scope of the EA's purposes and need had not been clearly stated or understood.

Reclamation conducted a tour of the wasteway channel on May 21, 2001, to inform the public of progress toward stabilizing the wasteway and to seek their input. Private landowners, BLM, a FOG representative, and two private consultants (Hicks and Hart) participated in the tour. The attendees walked the length of the wasteway from the pipe outlet to the lower Tyler Creek road crossing. A Reclamation representative explained how the project operates, the alignment of the channel at the area of considerable erosion, and why the channel was realigned at the landowner's request. Discussions with the private consultants led to the agreement that the area of considerable erosion is healing naturally and should be left alone. Different types of bioengineering techniques were discussed for specific areas along the channel. Using cuts of local native vegetation or bringing in additional native vegetation (versus bringing in non-native vegetation) was agreed upon as the preferred source.

Reclamation also sponsored a public workshop on December 6, 2001, at Ashland Middle School in Ashland, Oregon, to communicate the need, purposes, scope, and proposed action and to solicit public concern and input on alternatives to stabilize the wasteway. Notice of the workshop was mailed November 14 to approximately 150 individuals on the scoping mailing list. The notice provided background information, a map, and a request for questions and informational needs. Medford Mail

Tribune, Grants Pass Daily Courier, Ashland Daily Tidings, and Illinois Valley News received a November 26 news release announcing the workshop. Fifteen individuals attended the workshop and participated in small and large group discussions about their concerns and stabilization options. Facilitators recorded public comments on flip charts. Reclamation received three letters and comment forms before and eight letters following the meeting. Copies of the workshop displays were provided to BLM.

Agency Consultation and Coordination

Endangered Species Act of 1973

Reclamation has concluded the alternatives discussed in this EA would have no effects on listed species; therefore, no further consultation is needed. If, during the course of the stabilization efforts, NOAA Fisheries or USFWS lists any new species which frequent or occupy the work area, Reclamation would begin consultation on those species.

National Historic Preservation Act of 1966, as Amended

Historic property investigations were completed using consultation processes defined both by Section 106 of the National Historic Preservation Act and by Oregon State law requiring that archeological investigations on private land occur under a State permit. In May 2001, Reclamation informed the SHPO of the proposed project and that three sites were present in the access road right-of-way. In December 2001, in compliance with State law, Reclamation's contractor (HRA) submitted a request to the SHPO for a State permit to complete test excavations at the three sites. As part of the permit application process, in April 2002, the SHPO notified interested Indian tribes of the request. The tribes notified were the Cow Creek Band of the Umpqua Tribe of Indians, the Confederated Tribes of the Siletz Indians, the Klamath Tribes, and the Grand Ronde Tribes. In June 2002, the day the permit was to be issued, the Grand Ronde Tribes notified HRA that they were interested in monitoring the test excavation. Since scheduling issues required that HRA begin work immediately following receipt of the State permit, the Grand Ronde Tribes agreed to forgo monitoring and instead requested to be kept informed of testing results.

In September 2002, following receipt of HRA's test excavation report, Reclamation initiated consultations with the SHPO and the above-listed tribes about the eligibility of the sites to the National Register. Only the portion of each site included within the 60-foot-wide right-of-way corridor was address in the consultation. Each consulting party was provided with a copy of the test excavation report and a cover letter explaining the basis for Reclamation's assessment that the segment of the sites within the corridor was not eligible to the National Register. As shown in attachment B, the SHPO responded on October 17, 2002, with their concurrence that the segment of all three sites lying within the right-of-way corridor was not eligible for the National Register.

In a letter dated October 28, 2002, (attachment C) the Grand Ronde Tribes responded that "the Tribe considers these sites culturally significant, with a high possibility of an inadvertent discovery during

any ground-disturbance." They indicated their desire to be involved in future consultations if any discoveries were made. No other tribe responded.

Bureau of Land Management Coordination

Reclamation included three BLM employees on the initial wasteway stabilization mailing list and has since added two more. BLM provided comments on the scoping document. They attended Reclamation's May 21, 2001, wasteway tour and the December 6, 2001, public workshop and provided information concerning the location of BLM property along the wasteway. Reclamation will continue cooperating with BLM to ensure its actions are in agreement with BLM land resource management practices.

Tribal Consultation and Coordination

Reclamation included the Coquille Indian Tribe; the Cow Creek Band of the Umpqua Tribe; and the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Tribes in mailings of the initial scoping letter and the public workshop announcement. None of the tribes responded. Further tribal contacts are described in the *National Historic Preservation Act of 1966, as Amended* section of this chapter.

Adjacent Landowners

Adjacent landowners are included on the wasteway stabilization mailing list, received a copy of the scoping letter, and have had opportunities to comment. They attended the May 21, 2001, wasteway tour and the December 6, 2001, public workshop. They will each receive a copy of this draft EA for review and comment. Reclamation consulted with some individual landowners regarding the wasteway, its general use, and impacts specific to their property. One landowner negotiated with Reclamation for a right-of-way for the proposed access road alignment.

The adjacent landowners are on Reclamation's call list for notification prior to diverting water through the wasteway. When called, they will each receive information concerning why the wasteway will be used and approximately how long released water will be diverted through the wasteway. They will also be notified that someone will be on site to monitor the wasteway during flows.

Other Contacts

Other contacts regarding the wasteway include the local offices of ODEQ, Oregon Department of Fish and Wildlife, NOAA Fisheries, USFWS, and TID. Reclamation invited these agencies to the May 21, 2001, public tour but none attended. All are included on the wasteway stabilization mailing list and were sent copies of the scoping document. Each agency will receive a copy of this draft EA. ODEQ, Oregon Department of Fish and Wildlife, and TID are also on Reclamation's call list for notification prior to diverting water through the wasteway.

Chapter 5 — Environmental Commitments

Chapter 5 – Environmental Commitments

In addition to the actions described as part of the alternatives, the following commitments are made by Reclamation.

Soil

- Use best management practices to minimize environmental consequences caused by stabilizing activities or constructing the access road.
- Take all standard and reasonable precautions to reduce erosion during and after construction.
- Reseed areas of construction for installation of culverts along the access road at Schoolhouse Creek and around the wetlands to prevent future erosion.
- Restrict the use of the access road to Reclamation, its agents, successors and assigns, and the property owner during dry conditions.
- Use mostly hand labor for bioengineering techniques within the wasteway channel, thereby reducing or eliminating the amount of motorized or heavy equipment use and vehicular disturbance of existing soils.

Water

- Use bioengineering techniques within the wasteway channel to help reduce summer water temperatures.
- Take all standard and reasonable precautions to reduce erosion and limit sediment during and after construction.

Wetlands

- Obtain the appropriate State of Oregon and Corps permits prior to any construction.
- Follow all conditions of State of Oregon and Corps permits.
- Mitigate wetland losses as directed by the CWA 404 permit.

Vegetation

- Reduce the amount of cleared, unvegetated soils by using local native plant species for reseeding and revegetation.
- Use mostly hand labor for bioengineering techniques within the wasteway channel to reduce the effects construction could have on vegetation.
- Lay any trees cut for construction of the access road along the side of the access road for the landowner's use.
- Burn, chip, or bury onsite any slash or debris created during construction of the access road but not used for wasteway bank stabilization.

Fish and Wildlife

- Use mostly hand labor for bioengineering techniques within the wasteway channel, thereby reducing or eliminating the amount of motorized or heavy equipment use, to reduce the temporary effects construction could have on wildlife.
- Plan properly to produce efficiency and timely completion of construction activities with the least amount of people and heavy equipment working at any given time.

Historic Properties

- Minimize impacts to site deposits within the access road corridor that are segments of larger sites where areas beyond the right-of-way have not been evaluated for historic significance. Align the access road route across 35-JA-493 at the west side of the right-of-way. Align the access road route across 35-JA-494 at the east side of the right-of-way.
- Monitor initial soil excavation at site 35-JA-493 to ensure immediate detection in the unlikely event of discovery of potentially significant subsurface deposits that were not revealed during test excavations.
- Comply with National Historic Preservation Act concerning discovery situations. Halt construction work immediately in the area of any historically significant find and notify a Reclamation archeologist. Make an initial assessment of the discovery and, if warranted, notify the SHPO and interested tribes and reinitiate site evaluation actions.
- Comply with requirements of State of Oregon burial laws if human remains were encountered.
- Have a contract archeologist on site during any ground disturbing access road construction activities.

Sacred Sites

- Should any areas on Federal land be identified as needing stabilization, Reclamation would notify tribes and ask if they have any issues.

Cascade Siskiyou National Monument

- Contact and coordinate with BLM on wasteway matters within the boundaries of the Cascade Siskiyou National Monument.

Chapter 6 — References

Chapter 6 — References

This chapter lists references mentioned throughout the EA. The list is organized according to the chapter in which a reference is mentioned and further organized alphabetically by the agency or author's name and then chronologically.

Glossary References

No references

Chapter 1 References

No references

Chapter 2 References

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Chapter 4 References

No references

Chapter 5 References

No references

Attachments

- Attachment A – Endangered Species Act Correspondence
- Attachment B – National Historic Preservation Act Correspondence
- Attachment C – Tribal Consultation
- Attachment D – Mail Distribution List

Attachment A — Endangered Species Act Correspondence

- Reclamation requests for list of threatened and endangered species for Rogue River Basin Project
  - March 15, 2001, memorandum to USFWS
  - March 15, 2001, letter to NMFS

- NMFS Rogue River Basin Project referral to internet site: http://www.nwr.noaa.gov/lsalmon/salmesa/cohosoc/htm)

- April 16, 2001, USFWS Rogue River Basin Project response

- October 22, 2001, Reclamation memorandum to USFWS requesting updated threatened and endangered species list for Tyler Creek wasteway

- December 13, 2001, USFWS Tyler Creek wasteway response

- May 1, 2003, Reclamation memorandum to USFWS requesting updated threatened and endangered species list for Tyler Creek wasteway stabilization

- May 16, 2003, USFWS Tyler Creek wasteway stabilization response

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Lower Columbia Area Office
825 NE Multnomah Street, Suite 1110
Portland, Oregon 97232-2135

IN REPLY
REFER TO:

LCA-6101
ENV-7.00

MAR 15 2001

MEMORANDUM

To: State Supervisor, U.S. Fish and Wildlife Service
2600 SE 98th Avenue, Suite 100, Portland, OR 97266

From: for J. Eric Glover Romeo Wise
Area Manger

Subject: Request for List of Threatened and Endangered Species Under the Endangered Species Act - Bureau of Reclamation's Rogue River Basin Project

The Bureau of Reclamation (Reclamation) is proposing to upgrade access to the Tyler Creek Wasteway (Wasteway) and conduct bank stabilization and restoration activities. The storage system of the Rogue River Basin Project-Talent Division includes two high elevation reservoirs, Hyatt and Howard Prairie. Storage form these reservoirs is diverted to Keene Creek Reservoir, which serves as a forebay for the Green Springs Powerplant (Powerplant). Water from the Powerplant discharges into Emigrant Reservoir via Emigrant Creek and is subsequently regulated for irrigation within the Talent Irrigation District. The only alternative means of transferring water from Keene Creek Reservoir to Emigrant Reservoir is the Wasteway. Therefore, for periods when the Powerplant is out of service during the irrigation season, storage water is conveyed to Emigrant Reservoir through the Wasteway. The term Tyler Creek Wasteway is a misnomer in that the Wasteway is actually located in the South Fork of Schoolhouse Creek.

Use of the Wasteway is generally restricted in duration; however, during the spring of 1993, repairs and scheduled maintenance forced the shutdown of the Powerplant for virtually an entire irrigation season. As a consequence of the extended use of the Wasteway, damage to property outside Reclamation's existing right-of-way occurred. Reclamation has made an agreement with the property owners to conduct restoration activities in exchange for right-of-way access. Reclamation proposes construction of an unpaved road, including installing three culverts and one crossing ford to gain access to the Wasteway. Prior to the acquisition of the right-of-way, irrigators and Powerplant operators could not access the Wasteway directly. The construction of the road will make operation and maintenance of the Wasteway more feasible.

As part of Reclamation's National Environmental Policy Act (NEPA) compliance procedure, it is formally requesting information on any listed and/or proposed endangered and threatened species

that may be present within the proposed project area, as required under the Federal Endangered Species Act (ESA) of 1973. We request that your ESA species list cover the townships below.

Jackson County, Oregon T39S: R3E S32-33
T40S: R3E S4-5

We would appreciate receiving the ESA species list at your earliest convenience. Please send your response and any other correspondence related to this NEPA process to our Lower Columbia Area Office, 825 NE Multnomah Street, Suite 1110, Portland, OR 97232, Attention - L.A. 6101. You should contact Mr. Chuck Korson, (541) 312-9323, if you have any questions during the course of this NEPA review.

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Lower Columbia Area Office
825 NE Multnomah Street, Suite 1110
Portland, Oregon 97232-2135

IN REPLY
REFER TO:

LCA-6101
ENV-7.00

MAR 15 2001

Mr. Michael P. Tehan
Chief, Oregon State Branch Habitat Conservation Division
National Marine Fisheries Service
525 NE Oregon Street
Portland, OR 97232

Subject: Request for List of Threatened and Endangered Species Under the Endangered Species Act - Bureau of Reclamation's Rogue River Basin Project

Dear Mr. Tehan:

The Bureau of Reclamation (Reclamation) is proposing to upgrade access to the Tyler Creek Wasteway (Wasteway) and conduct bank stabilization and restoration activities. The storage system of the Rogue River Basin Project-Talent Division includes two high elevation reservoirs, Hyatt and Howard Prairie. Storage form these reservoirs is diverted to Keene Creek Reservoir, which serves as a forebay for the Green Springs Powerplant (Powerplant). Water from the Powerplant discharges into Emigrant Reservoir via Emigrant Creek and is subsequently regulated for irrigation within the Talent Irrigation District. The only alternative means of transferring water from Keene Creek Reservoir to Emigrant Reservoir is the Wasteway. Therefore, for periods when the Powerplant is out of service during the irrigation season, storage water is conveyed to Emigrant Reservoir through the Wasteway. The term Tyler Creek Wasteway is a misnomer in that the Wasteway is actually located in the South Fork of Schoolhouse Creek.

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Sincerely,

for J. Eric Glover
Area Manager

Protected Resources
NOAA Fisheries National Marine Fisheries Service

COHO SALMON

Oncorhynchus kisutch

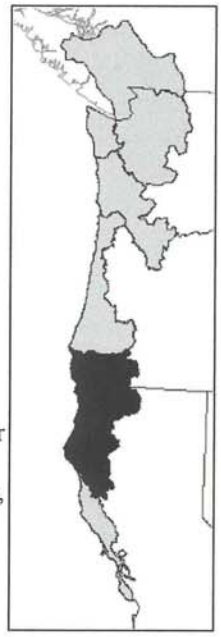
SOUTHERN OREGON/NORTHERN CALIFORNIA COASTS ESU

LISTED THREATENED

May 1997

ESU* STATUS AND DESCRIPTION: Listed as a threatened species on May 6, 1997. The ESU includes all naturally spawned populations of coho salmon in coastal streams between Cape Blanco, Oregon, and Punta Gorda, California.

** An Evolutionarily Significant Unit or "ESU" is a distinctive group of Pacific salmon, steelhead, or sea-run cutthroat trout.*



CRITICAL HABITAT:

Current Status - Designated on May 5, 1999.

Description - Critical habitat is designated to include all river reaches accessible to listed coho salmon between Cape Blanco and Punta Gorda. Excluded are areas above specific dams or above longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years). Major river basins containing spawning and rearing habitat for this ESU comprise approximately 18,090 square miles in California and Oregon. The following counties lie partially or wholly within watersheds inhabited by this ESU:California - Del Norte, Glenn, Humboldt, Lake, Mendocino, Siskiyou, and Trinity; Oregon - Coos, Curry, Douglas, Jackson, Josephine, and Klamath.

More detailed critical habitat information (i.e., specific watersheds, migration barriers, habitat features, and special management considerations) for this ESU can be found in the May 5, 1999 *Federal Register* notice.

PROTECTIVE REGULATIONS: On July 18, 1997, NMFS published an interim rule that identified several exceptions to the Endangered Species Act's Section 9 take prohibitions.

ESU MAPS AND DATA:

- View Detailed Oregon Coast Coho ESU Map (Adobe Acrobat PDF format)§
- View Range Map for all Coho ESUs
- Download coho salmon ESU data in Arc/Info export and shape file format
- Download E-sized plot files of West Coast coho salmon listings in RTL file format for large format

plotters

STATUS REVIEWS:
NOAA Technical Memorandum NMFS-NWFSC-24, September 1995
Status Review of Coho Salmon from Washington, Oregon, and California

STATUS REVIEW UPDATE MEMOS:
Scientific disagreements regarding coho salmon under the ESA, 9/27/96 (0.5 mb pdf)
Conclusions regarding the updated status of west coast coho salmon, 12/20/96 (6 mb pdf)
Conclusions regarding the updated status of coho salmon from northern California and Oregon coasts, 4/3/97 (6.3 mb pdf)

FEDERAL REGISTER NOTICES:
View Federal Register Notices for Coho Salmon§

§You will need Adobe Acrobat Reader in order to view and print the detailed ESU map file and the Federal Register Notices. This program is available for free at the following link. Get Acrobat Reader

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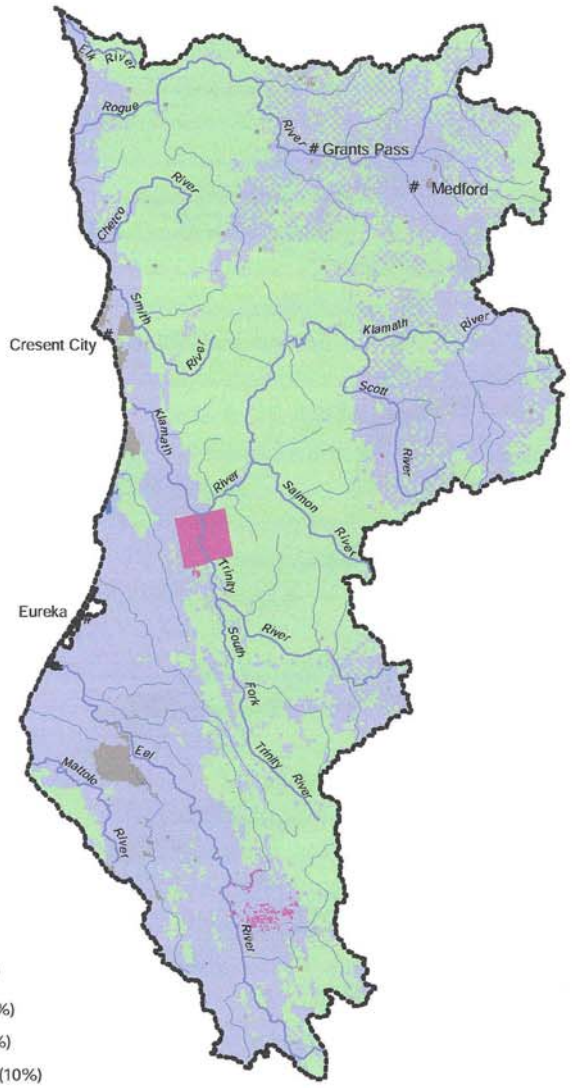
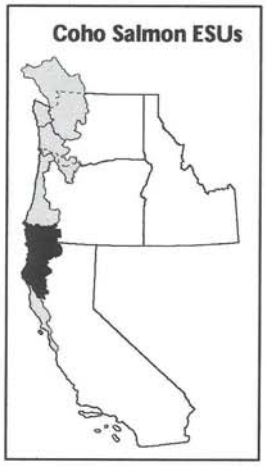
Updated November 16, 2000

SOUTHERN OREGON/NORTHERN CALIFORNIA COASTS COHO SALMON ESU





Land Ownership

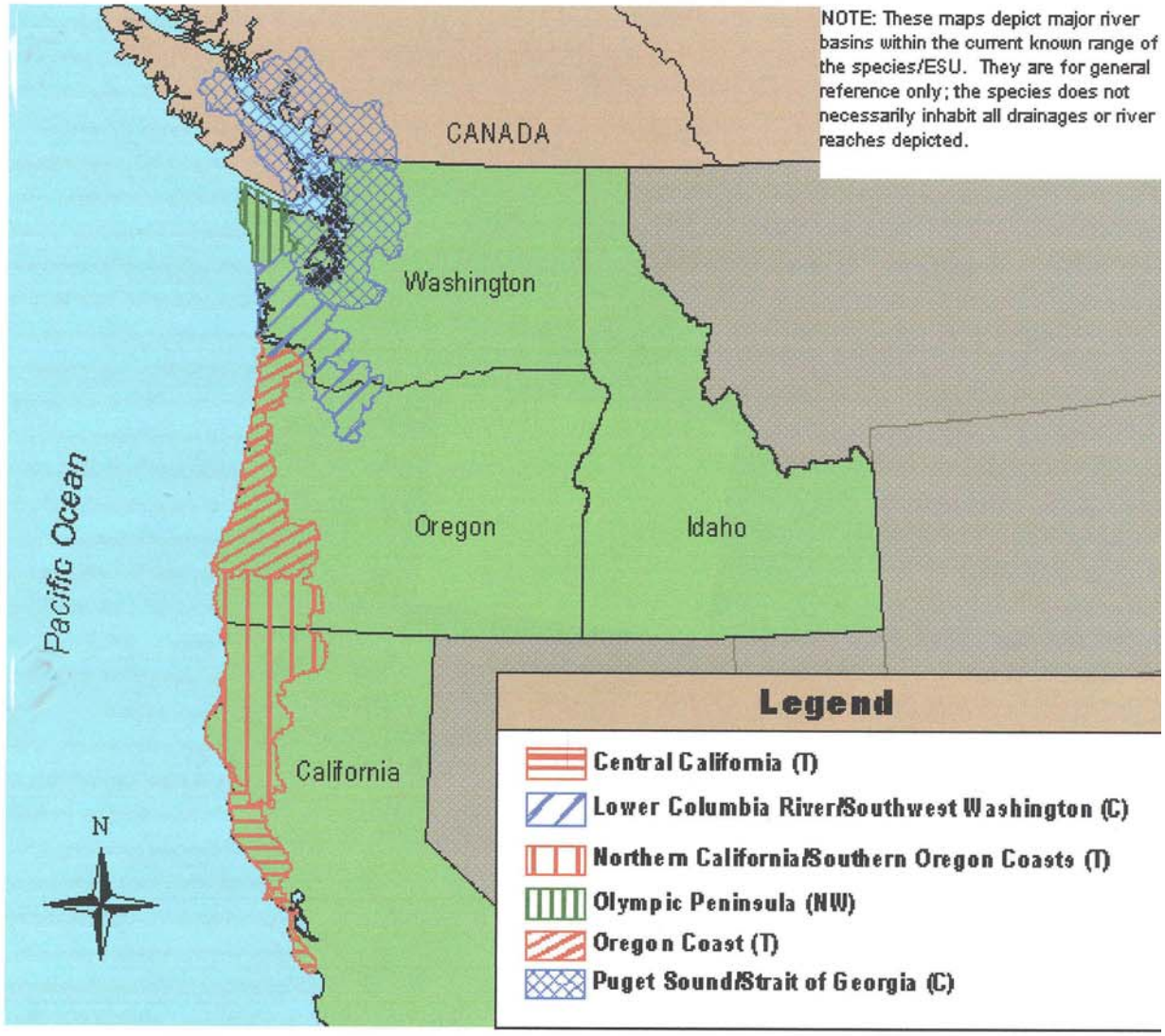
- Federal (36%)
- Private (53%)
- State/Local (10%)
- Tribal (1%)

United State Department of Commerce
National Oceanic & Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
HABITAT CONSERVATION DIVISION
525 N.E. Oregon St., Suite 410
Portland , OR 97232
Tel (503) 231-2223

SCALE:
10 0 10 20 30 Miles
10 0 10 20 30 Kilometers

MAP DATE 2/20/99
CREATED BY D.A.
HCDGIS\RGN\WS\STONE\COHO

Note: Map is for general reference only


NOTE: These maps depict major river basins within the current known range of the species/ESU. They are for general reference only; the species does not necessarily inhabit all drainages or river reaches depicted.
CANADA
Washington
Oregon
Idaho
California
Pacific Ocean
N
Legend
Central California (T)
Lower Columbia River/Southwest Washington (C)
Northern California/Southern Oregon Coasts (T)
Olympic Peninsula (NW)
Oregon Coast (T)
Puget Sound/Strait of Georgia (C)
Status
T - Threatened
C - Candidate
NW - Not Warranted

Protected Resources
NOAA Fisheries National Marine Fisheries Service

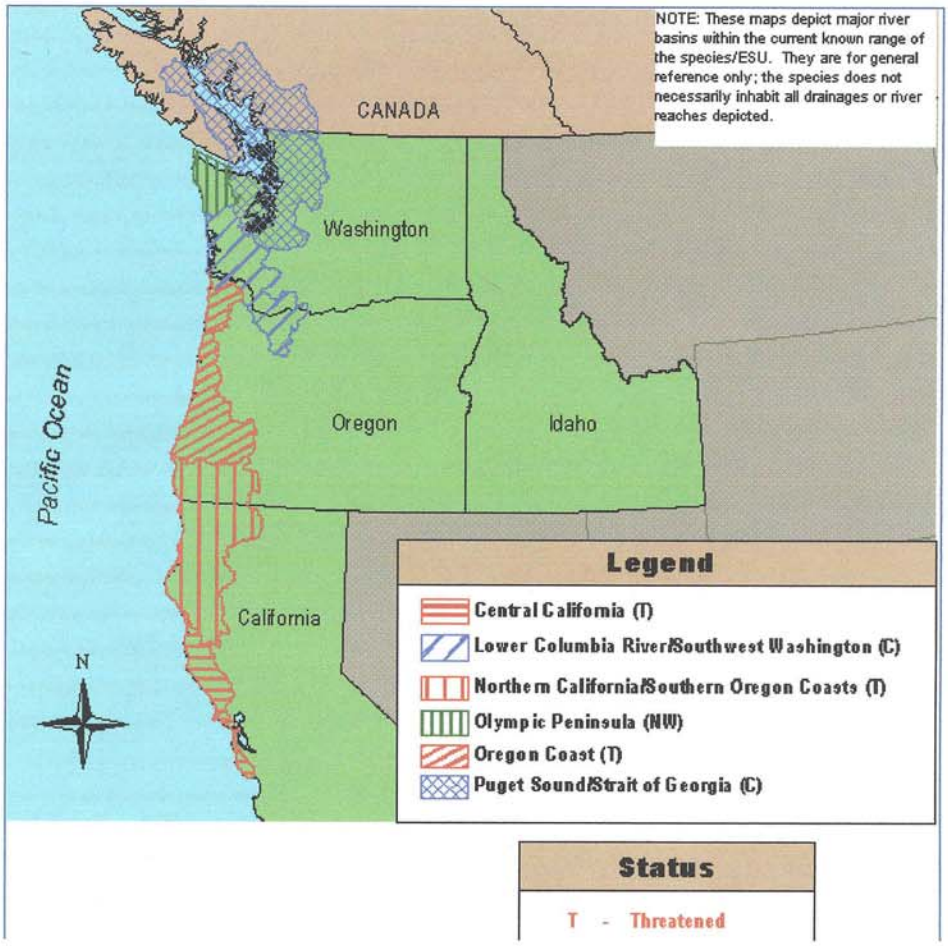
COHO SALMON

Oncorhynchus kisutch

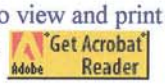
COHO LISTING STATUS MAP

Click on an ESU or legend name below, or on the ESU name in the table provided to view a detailed map in Adobe Acrobat PDF Format.§

** An Evolutionarily Significant Unit or "ESU" is a distinctive group of Pacific salmon, steelhead, or sea-run cutthroat trout.*



ESU Name	File Size (PDF)§
Central California	267 K
Lower Columbia River/Southwest Washington	570 K
Northern California/Southern Oregon Coasts	588 K
Olympic Peninsula	367 K
Oregon Coast	514 K
Puget Sound/Strait of Georgia	515 K

§You will need Adobe Acrobat Reader in order to view and print the map files listed on this page. This program is available for free at the following link. 

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NOAA Technical Memorandum NMFS-NWFSC-24

Status Review of Coho Salmon from Washington, Oregon, and California

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**National Marine Fisheries Service
Northwest Fisheries Science Center
Coastal Zone and Estuarine Studies Division
2725 Montlake Blvd. E.
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and

***National Marine Fisheries Service
Southwest Region
Protected Species Management Division
501 W. Ocean Blvd., Suite 4200, Long Beach, CA 90802-4213**

September 1995

U.S. DEPARTMENT OF COMMERCE
Ronald H. Brown, Secretary

National Oceanic and Atmospheric Administration
D. James Baker, Administrator

National Marine Fisheries Service
Rolland A. Schmitten, Assistant Administrator for Fisheries

CONTENTS

EXECUTIVE SUMMARY

The Endangered Species Act (ESA) allows listing of distinct population segments of vertebrates as well as named species and subspecies. The policy of the National Marine Fisheries Service (NMFS) on this issue for Pacific salmon and steelhead is that a population will be considered distinct for purposes of the ESA if it represents an evolutionarily significant unit (ESU) of the species as a whole. To be considered an ESU, a population or group of populations must 1) be substantially reproductively isolated from other populations, and 2) contribute substantially to ecological/genetic diversity of the biological species. Once an ESU is identified, a variety of factors related to population abundance are considered in determining whether a listing is warranted.

In October 1993, in response to three petitions seeking protection for coho salmon under the ESA, NMFS initiated a status review of coho salmon in Washington, Oregon, and California, and formed a Biological Review Team (BRT) to conduct the review. This report summarizes biological and environmental information gathered in that process.

Proposed Coho Salmon ESUs

The BRT examined genetic, life history, biogeographic, geologic, and environmental information to identify where ESU boundaries should be located. In particular, physical environment and ocean conditions/upwelling patterns, estuarine and freshwater fish distributions, and coho salmon river entry and spawn timing and marine coded-wire-tag recovery patterns were found to be the most informative for this process. Based on this examination, the BRT identified six coho salmon ESUs in Washington, Oregon, and California. The geographic boundaries of the six proposed ESUs are as follows:

1. Central California coast. The geographic boundaries of this ESU extend from Punta Gorda in northern California south to and including the San Lorenzo River in central California, and include tributaries to San Francisco Bay, excluding the Sacramento-San Joaquin River system.
2. Southern Oregon/northern California coasts. This ESU includes coho salmon from Cape Blanco in southern Oregon to Punta Gorda in northern California.
3. Oregon coast. This ESU covers coastal drainages along most of the Oregon coast from Cape Blanco to the mouth of the Columbia River.
4. Lower Columbia River/southwest Washington coast. Historically, this ESU probably included coho salmon from all tributaries of the Columbia River below the Klickitat River on the Washington side and below the Deschutes River on the Oregon side (including Willamette River as far upriver as the Willamette Falls), as well as coastal drainages in southwest Washington between the Columbia River and Point Grenville (between the Copalis and Quinault Rivers).
5. Olympic Peninsula. The geographic boundaries of this ESU are entirely within Washington, including coastal drainages from Point Grenville to and including Salt Creek (directly west of the Elwha River).
6. Puget Sound/Strait of Georgia. This ESU includes coho salmon from drainages of Puget Sound and Hood Canal, the eastern Olympic Peninsula (east of Salt Creek), and the Strait of Georgia from the eastern side of Vancouver Island and the British Columbia mainland (north to and including Campbell and Powell Rivers), excluding the upper Fraser River above Hope.

Assessment of Extinction Risk

The ESA (section 3) defines the term endangered species as any species which is in danger of extinction throughout all or a significant portion of its range. The term threatened species is defined as any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. According to the ESA, the determination whether a species is threatened or endangered should be made on the basis of the best scientific information available regarding its current status, after taking into consideration conservation measures that are proposed or are in place. In this review, the BRT did not evaluate likely or possible effects of conservation measures and, therefore, did not make recommendations as to whether identified ESUs should be listed as threatened or endangered species; rather, the BRT drew scientific conclusions about the risk of extinction faced by identified ESUs under the assumption that present conditions will continue. The resulting conclusions for each ESU follow.

1. Central California coast. There was unanimous agreement among the BRT that natural populations of coho salmon in this ESU are presently in danger of extinction. The chief reasons for this assessment were extremely low current abundance, especially compared to historical abundance, widespread local extinctions, clear downward trends in abundance, extensive habitat degradation and associated decreased carrying capacity, and a long history of artificial propagation with the use of non-native stocks. In addition, recent droughts and current ocean conditions may have further

reduced run sizes.

2. Southern Oregon/northern California coasts. There was unanimous agreement among the BRT that coho salmon in this ESU are not in danger of extinction but are likely to become endangered in the foreseeable future if present trends continue. Current run size, the severe decline from historical run size, the frequency of local extinctions, long-term trends that are clearly downward, degraded habitat and associated reduction in carrying capacity, and widespread hatchery production using exotic stocks are all factors that contributed to the assessment. Like the central California ESU, recent droughts and current ocean conditions may have further reduced run sizes.

3. Oregon coast. The BRT concluded that coho salmon in this ESU are not in danger of extinction but are likely to become endangered in the future if present trends continue. The BRT reached this conclusion based on low recent abundance estimates that are 5-10% of historical abundance estimates, clearly downward long-term trends, recent spawner-to-spawner ratios that are below replacement, extensive habitat degradation, and widespread hatchery production of coho salmon. Drought and current ocean conditions may have also reduced run sizes.

4. Lower Columbia River/southwest Washington coast. Previously, NMFS concluded that it could not identify any remaining natural populations of coho salmon in the lower Columbia River (excluding the Clackamas River) that warranted protection under the ESA. The Clackamas River produces moderate numbers of natural coho salmon. The BRT could not reach a definite conclusion regarding the relationship of Clackamas River late-run coho salmon to the historic lower Columbia River ESU. However, the BRT did conclude that if the Clackamas River late-run coho salmon is a native run that represents a remnant of a lower Columbia River ESU, the ESU is not presently in danger of extinction but is likely to become so in the foreseeable future if present conditions continue.

   For southwest Washington coho salmon, uncertainty about the ancestry of coho salmon runs given high historical and current levels of artificial production prevented the BRT from reaching a definite conclusion regarding the relationship between coho salmon in that area and the historical lower Columbia River/southwest Washington ESU. If new information becomes available, the relationship and status of the ESU will be reexamined.

5. Olympic Peninsula. While there is continuing cause for concern about habitat destruction and hatchery practices within this ESU, the BRT concluded that there is sufficient native, natural, self-sustaining production of coho salmon that this ESU is not in danger of extinction and is not likely to become endangered in the foreseeable future unless conditions change substantially.

6. Puget Sound/Strait of Georgia. The BRT was concerned that if present trends continue, this ESU is likely to become endangered in the foreseeable future. Although current population abundance is near historical levels and recent trends in overall population abundance have not been downward, there is substantial uncertainty relating to several of the risk factors considered. These risk factors include widespread and intensive artificial propagation, high harvest rates, extensive habitat degradation, a recent dramatic decline in adult size, and unfavorable ocean conditions. Further consideration of this ESU is warranted to attempt to clarify some of these uncertainties.

ACKNOWLEDGMENTS

The status review for west coast coho salmon was conducted by a team of researchers from the National

Marine Fisheries Service (NMFS). This biological review team relied on information in the Endangered Species Act Administrative Record for West Coast Coho Salmon, which was developed pursuant to this review and includes comments, data, and reports submitted by the public and by state, tribal, and federal agencies. The authors acknowledge the efforts of all who contributed to this record, especially the Washington Department of Fish and Wildlife, Oregon Department of Fish and Wildlife, California Department of Fish and Game, U.S. Fish and Wildlife Service, and Northwest Indian Fisheries Commission.

The biological review team for this status review included: Peggy Busby, Dr. David Damkaer, Robert Emmett, Dr. Jeffrey Hard, Dr. Orlay Johnson, Dr. Robert Kope (formerly with the Southwest Fisheries Science Center), Dr. Conrad Mahnken, Gene Matthews, George Milner, Dr. Michael Schiewe, David Teel, Dr. Thomas Wainwright, William Waknitz, Dr. Robin Waples, Laurie Weitkamp, Dr. John Williams, and Dr. Gary Winans, all from the Northwest Fisheries Science Center (NWFSC), and Gregory Bryant from the NMFS Southwest Region. Craig Wingert, from the NMFS Southwest Region, and Steven Stone, from the NMFS Northwest Regional Office, also participated in the discussions and provided information on coho salmon life history and abundance.

Jason Griffith and Megan Ferguson, students from the University of Washington, were instrumental in compiling information on coho salmon hatcheries. Don Vandoornik and Dave Kuligowski (NWFSC) collected new genetic data for the status review, and Kathleen Neely (NWFSC) provided most of the graphics for this document and assisted in the completion of this status review in numerous other ways.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oregon Fish and Wildlife Office
2600 S.E. 98th Avenue, Suite 100
Portland, Oregon 97266
(503) 231-6179 FAX: (503) 231-6195

Reply To: 8330.4031(01)
File Name: Sp403.wpd
OARS Number: 01-1688

J. Eric Glover
U.S. Bureau of Reclamation
825 NE Multnomah Street Suite 1110
Portland, OR 97232-2135

Subject: Tyler Creek Wasteway Access Upgrade and Bank Stabilization and Restoration Project (1-7-01-SP-403).

Dear Mr. Glover:

This is in response to your memorandum, dated March 15, 2001, requesting information on listed and proposed endangered and threatened species that may be present within the area of the Tyler Creek Wasteway Access Upgrade and Bank Stabilization and Restoration Project in Jackson County. The U.S. Fish and Wildlife Service (Service) received your correspondence on March 16, 2001.

We have attached a list (Attachment A) of threatened and endangered species that may occur within the area of the Tyler Creek Wasteway Access Upgrade and Bank Stabilization and Restoration Project. The list fulfills the requirement of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). U.S. Bureau of Reclamation (BR) requirements under the Act are outlined in Attachment B.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems on which they depend may be conserved. Under section 7(a)(1) and 7(a)(2) of the Act and pursuant to 50 CFR 402 *et seq.*, BR is required to utilize their authorities to carry out programs which further species conservation and to determine whether projects may affect threatened and endangered species, and/or critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) which are major Federal actions significantly affecting the quality of the human environment as defined in NEPA (42 U.S.C. 4332 (2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to the Biological Assessment be prepared to determine whether they may affect listed and proposed species. Recommended contents of a Biological Assessment are described in Attachment B, as well as 50 CFR 401.12.

If BR determines, based on the Biological Assessment or evaluation, that threatened and endangered species and/or critical habitat may be affected by the project, BR is required to consult with the Service following the requirements of 50 CFR 402 which implement the Act.

Attachment A includes a list of candidate species under review for listing. The list reflects changes to the candidate species list published October 25, 1999, in the Federal Register (Vol. 64, No. 205, 57534) and the addition of "species of concern." Candidate species have no protection under the Act but are included for consideration as it is possible candidates could be listed prior to project completion. Species of concern are those taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

If a proposed project may affect candidate species or species of concern, BR is not required to perform a Biological Assessment or evaluation or consult with the Service. However, the Service recommends addressing potential impacts to these species in order to prevent future conflicts. Therefore, if early evaluation of the project indicates that it is likely to adversely impact a candidate species or species of concern, BR may wish to request technical assistance from this office.

Your interest in endangered species is appreciated. The Service encourages BR to investigate opportunities for incorporating conservation of threatened and endangered species into project planning processes as a means of complying with the Act. If you have questions regarding your responsibilities under the Act, please contact Cindy Bright at (503) 231-6179, or Scott Center at (541) 957-3472. For questions regarding anadromous fish, please contact National Marine Fisheries Service, 525 NE Oregon Street, Suite 500, Portland, Oregon 97232, (503) 230-5400. All correspondence should include the above referenced file number.

Sincerely,

Nancy K. Lee

for Kemper M. McMaster
State Supervisor

Attachments
1-7-01-SP-403
cc: OFWO-ES
ODFW (nongame)
cc:Chuck Korson BR

ATTACHMENT A

FEDERALLY LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES, CANDIDATE SPECIES AND SPECIES OF CONCERN THAT MAY OCCUR WITHIN THE AREA OF THE TYLER CREEK WASTEWAY ACCESS UPGRADE AND BANK STABILIZATION AND RESTORATION PROJECT
1-7-01-SP-403

LISTED SPECIES[1/]

Birds		
Bald eagle	*Haliaeetus leucocephalus*	T
Northern spotted owl[2/]	*Strix occidentalis caurina*	CH T
Fish		
Coho salmon (S. Oregon/N. Calif. Coast)[3/]	*Oncorhynchus kisutch*	**T
Plants		
Gentner mission-bells[4/]	*Fritillaria gentneri*	E

PROPOSED SPECIES

Fish		
Steelhead (Klamath Mountains Province)[5/]	*Oncorhynchus mykiss*	PT

CANDIDATE SPECIES[6/]

Amphibians and Reptiles	
Oregon spotted frog	*Rana pretiosa*
Invertebrates	
Mardon skipper butterfly	*Polites mardon*

SPECIES OF CONCERN

Mammals	
Pallid bat	*Antrozous pallidus pacificus*
Pacific western big-eared bat	*Corynorhinus (=Plecotus) townsendii townsendii*
Silver-haired bat	*Lasionycteris noctivagans*
Pacific fisher	*Martes pennanti pacifica*
Long-eared myotis (bat)	*Myotis evotis*
Fringed myotis (bat)	*Myotis thysanodes*
Long-legged myotis (bat)	*Myotis volans*
Yuma myotis (bat)	*Myotis yumanensis*
Birds	
Northern goshawk	*Accipiter gentilis*
Band-tailed pigeon	*Columba fasciata*
Olive-sided flycatcher	*Contopus cooperi (=borealis)*
Yellow-breasted chat	*Icteria virens*
Acorn woodpecker	*Melanerpes formicivorous*
Lewis' woodpecker	*Melanerpes lewis*
Mountain quail	*Oreortyx pictus*
White-headed woodpecker	*Picoides albolarvatus*

Amphibians and Reptiles	
Tailed frog	*Ascaphus truei*
Northwestern pond turtle	*Clemmys marmorata marmorata*
Common kingsnake	*Lampropeltis getula*
California mountain kingsnake	*Lampropeltis zonata*
Siskiyou Mountains salamander	*Plethodon stormi*
Northern red-legged frog	*Rana aurora aurora*
Foothill yellow-legged frog	*Rana boylii*
Cascades frog	*Rana cascadae*
Fish	
Pacific lamprey	*Lampetra tridentata*
Coastal cutthroat trout (S. OR/CA Coasts)	*Oncorhynchus clarki clarki*
Invertebrates	
Denning's agapetus caddisfly	*Agapetus denningi*
Franklin's bumblebee	*Bombus franklini*
Siskiyou chloealtis grasshopper	*Chloealtis aspasma*
Green Springs Mountain farulan caddisfly	*Farula davisi*
Sagehen Creek goeracean caddisfly	*Goeracea oregona*
Schuh's homoplectran caddisfly	*Homoplectra schuhi*
caddisfly (no common name)	*Moselyana comosa*
Siskiyou gazelle beetle	*Nebria gebleri siskiyouensis*
Plants	
Wayside aster	*Aster vialis*
Crenulate grape-fern	*Botrychium crenulatum*
Greene's mariposa-lily	*Calochortus greenei*
Clustered lady's-slipper	*Cypripedium fasciculatum*
Detling's microseris	*Microseris laciniata* ssp. *detlingii*

(E) - Listed Endangered *(T) - Listed Threatened* *(CH) - Critical Habitat has been designated for this species*
(PE) - Proposed Endangered *(PT) - Proposed Threatened* *(PCH) - Critical Habitat has been proposed for this species*

Species of Concern - Taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

(CF) - Candidate: National Marine Fisheries Service designation for any species being considered by the Secretary for listing for endangered or threatened species, but not yet the subject of a proposed rule.

** *Consultation with National Marine Fisheries Service required.*

[1] *U. S. Department of Interior, Fish and Wildlife Service, October 31, 2000, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12.*

[2] *Federal Register Vol. 57, No. 10, January 15, 1992, Final Rule-Critical Habitat for the Northern Spotted Owl*

[3] *Federal Register Vol. 62, No. 87, May 6, 1997, Final Rule-Coho salmon*

[4] *Federal Register Vol. 64, No. 237, December 10 , 1999, Final Rule -Fritillaria gentneri*

[5] *Federal Register Vol. 66, No. 29, February 12, 2001, Proposed Rule-Klamath Mountains Province Steelhead*

[6] *Federal Register Vol. 64, No. 205, October 25, 1999, Notice of Review-Candidate or Proposed Animals and Plants*

ATTACHMENT B

FEDERAL AGENCIES RESPONSIBILITIES UNDER SECTION 7(a) and (c)
OF THE ENDANGERED SPECIES ACT

SECTION 7(a)-Consultation/Conference

Requires:

1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;

2) Consultation with FWS when a Federal action may affect a listed endangered or threatened species to insure that any action authorized, funded or carried out by a Federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of Critical Habitat. The process is initiated by the Federal agency after they have determined if their action may affect (adversely or beneficially) a listed species; and

3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed Critical Habitat.

SECTION 7(c)-Biological Assessment for Major Construction Projects[1]

Requires Federal agencies or their designees to prepare a Biological Assessment (BA) for construction projects only. The purpose of the BA is to identify proposed and/or listed species which are/is likely to be affected by a construction project. The process is initiated by a Federal agency in requesting a list of proposed and listed threatened and endangered species (list attached). The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the species list, the accuracy of the species list should be informally verified with our Service. No irreversible commitment of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may be taken; however, no construction may begin.

To complete the BA, your agency or its designee should: (1) conduct and on-site inspection of the area to be affected by the proposal which may include a detailed survey of the area to determine if the species is present and whether suitable habitat exists for either expanding the existing population or for potential reintroduction of the species; (2) review literature and scientific data to determine species distribution, habitat needs, and other biological requirements; (3) interview experts including those within FWS, National Marine Fisheries Service, State conservation departments, universities, and others who may have data not yet published in scientific literature; (4) review and analyze the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; (5) analyze alternative actions that may provide conservation measures and (6) prepare a report documenting the results, including a discussion of study methods used, nay problems encountered, and other relevant information. The BA should conclude whether or not a listed species will be affected. Upon completion, the report should be forwarded to our Portland Office.

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[1]A construction project (or other undertaking having similar physical impacts) which is a major Federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332. (2)c). On projects other that construction, it is suggested that a biological evaluation similar to the biological assessment be undertaken to conserve species influenced by the Endangered Species Act.

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Lower Columbia Area Office
825 NE Multnomah Street, Suite 1110
Portland, Oregon 97232-2135

IN REPLY
REFER TO:

LCA-6101
ENV-7.00

OCT 22 2001

MEMORANDUM

To: State Supervisor, U.S. Fish and Wildlife Service
2600 S.E. 98th Avenue, Suite 100, Portland, OR 97266

From: David R. Nelson
Acting Area Manager, Lower Columbia Area Office

Subject: Request for Updated Threatened and Endangered Species List for Tyler Creek "Wasteway" Proposed Restoration

On March 15, 2001 the Bureau of Reclamation (Reclamation) requested a list of threatened and endangered species occurring within our proposed Tyler Creek "Wasteway" maintenance road construction and restoration project in preparation for National Environmental Policy Act (NEPA) compliance. On April 18, 2001 we received your list (number 1-7-01-SP-403). Reclamation's NEPA and other planning activities for this project are ongoing and at this time we would like to request the Fish and Wildlife Service verify the accuracy of our list and send an updated list if any changes have occurred. We request that your Endangered Species Act (ESA) species list cover the following townships:

Jackson County, Oregon T39S: R3E S32-33
T40S: R3E S4-5

Please send your response to the address above, attention LCA-6101. If you have any questions please contact Tanya Sommer at 503-872-2795 or you can reach her by email at tsommer@pn.usbr.gov.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oregon Fish and Wildlife Office
2600 S.E. 98th Avenue, Suite 100
Portland, Oregon 97266
(503) 231-6179 FAX: (503) 231-6195

Reply To: 8330.0791(02)
File Name: Sp079.wpd
Tracking Number: 02-440

December 13, 2001

David R. Nelson
U.S. Bureau of Reclamation
825 NE Multnomah Street, Suite 1110
Portland, OR 97232-2135

Subject: Tyler Creek "Wasteway" Maintenance Project (1-7-02-SP-079).

Dear Mr. Nelson:

This is in response to your memorandum, dated October 22, 2001, requesting information on listed and proposed endangered and threatened species that may be present within the area of the Tyler Creek "Wasteway" Maintenance Project in Jackson County. The U.S. Fish and Wildlife Service (Service) received your correspondence on October 23, 2001.

We have attached a list (Attachment A) of threatened and endangered species that may occur within the area of the Tyler Creek "Wasteway" Maintenance Project. The list fulfills the requirement of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). U.S. Bureau of Reclamation (BR) requirements under the Act are outlined in Attachment B.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems on which they depend may be conserved. Under section 7(a)(1) and 7(a)(2) of the Act and pursuant to 50 CFR 402 *et seq.*, BR is required to utilize their authorities to carry out programs which further species conservation and to determine whether projects may affect threatened and endangered species, and/or critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) which are major Federal actions significantly affecting the quality of the human environment as defined in National Environmental Policy Act (NEPA) (42 U.S.C. 4332 (2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to the Biological Assessment be prepared to determine whether they may affect listed and proposed species. Recommended contents of a Biological Assessment are described in Attachment B, as well as 50 CFR 402.12.

If BR determines, based on the Biological Assessment or evaluation, that threatened and endangered species and/or critical habitat may be affected by the project, BR is required to consult with the Service following the requirements of 50 CFR 402 which implement the Act.

Attachment A includes a list of candidate species under review for listing. The list reflects changes to the candidate species list published October 30, 2001, in the Federal Register (Vol. 66, No. 210, 54808) and the addition of "species of concern." Candidate species have no protection under the Act but are included for consideration as it is possible candidates could be listed prior to project completion. Species of concern are those taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

If a proposed project may affect only candidate species or species of concern, BR is not required to perform a Biological Assessment or evaluation or consult with the Service. However, the Service recommends addressing potential impacts to these species in order to prevent future conflicts. Therefore, if early evaluation of the project indicates that it is likely to adversely impact a candidate species or species of concern, BR may wish to request technical assistance from this office.

Your interest in endangered species is appreciated. The Service encourages BR to investigate opportunities for incorporating conservation of threatened and endangered species into project planning processes as a means of complying with the Act. If you have questions regarding your responsibilities under the Act, please contact Jeff Dillon at (503) 231-6179 or Cindy Bright at (541)957-3479. All correspondence should include the above referenced file number.
For questions regarding salmon and steelhead trout, please contact National Marine Fisheries Service, 525 NE Oregon Street, Suite 500, Portland, Oregon 97232, (503) 230-5400.

Sincerely,

for Kemper M. McMaster
State Supervisor

Attachments
1-7-02-SP-079

cc: OFWO-ES
ODFW (nongame)

ATTACHMENT A

FEDERALLY LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES, CANDIDATE SPECIES AND SPECIES OF CONCERN THAT MAY OCCUR WITHIN THE AREA OF THE TYLER CREEK "WASTEWAY" MAINTENANCE PROJECT
1-7-02-SP-079

LISTED SPECIES[1/]

Birds		
Bald eagle[2/]	*Haliaeetus leucocephalus*	T
Northern spotted owl[3/]	*Strix occidentalis caurina*	CH T
Fish		
Coho salmon (S. Oregon/N. Calif. Coast)[4/]	*Oncorhynchus kisutch*	**T
Plants		
Gentner mission-bells[5/]	*Fritillaria gentneri*	E

PROPOSED SPECIES

None

CANDIDATE SPECIES[6/]

Amphibians and Reptiles	
Oregon spotted frog	*Rana pretiosa*
Invertebrates	
Mardon skipper butterfly	*Polites mardon*

SPECIES OF CONCERN

Mammals	
Pallid bat	*Antrozous pallidus pacificus*
Pacific big-eared bat	*Corynorhinus (=Plecotus) townsendii townsendii*
Silver-haired bat	*Lasionycteris noctivagans*
Pacific fisher	*Martes pennanti pacifica*
Long-eared myotis (bat)	*Myotis evotis*
Fringed myotis (bat)	*Myotis thysanodes*
Long-legged myotis (bat)	*Myotis volans*
Yuma myotis (bat)	*Myotis yumanensis*

Birds	
Northern goshawk	*Accipiter gentilis*
Band-tailed pigeon	*Columba fasciata*
Olive-sided flycatcher	*Contopus cooperi (=borealis)*
Yellow-breasted chat	*Icteria virens*
Acorn woodpecker	*Melanerpes formicivorous*
Lewis' woodpecker	*Melanerpes lewis*
Mountain quail	*Oreortyx pictus*
White-headed woodpecker	*Picoides albolarvatus*
Amphibians and Reptiles	
Tailed frog	*Ascaphus truei*
Northwestern pond turtle	*Clemmys marmorata marmorata*
Common kingsnake	*Lampropeltis getula*
California mountain kingsnake	*Lampropeltis zonata*
Siskiyou Mountains salamander	*Plethodon stormi*
Northern red-legged frog	*Rana aurora aurora*
Foothill yellow-legged frog	*Rana boylii*
Cascades frog	*Rana cascadae*
Northern sagebrush lizard	*Sceloporus graciosus graciosus*
Fish	
Pacific lamprey	*Lampetra tridentata*
Coastal cutthroat trout (S. OR/CA Coasts)	*Oncorhynchus clarki clarki*
Invertebrates	
Denning's agapetus caddisfly	*Agapetus denningi*
Franklin's bumblebee	*Bombus franklini*
Siskiyou chloealtis grasshopper	*Chloealtis aspasma*
Green Springs Mountain farulan caddisfly	*Farula davisi*
Sagehen Creek goeracean caddisfly	*Goeracea oregona*
Schuh's homoplectran caddisfly	*Homoplectra schuhi*
caddisfly (no common name)	*Moselyana comosa*
Siskiyou gazelle beetle	*Nebria gebleri siskiyouensis*
Plants	
Wayside aster	*Aster vialis*
Crenulate grape-fern	*Botrychium crenulatum*
Greene's mariposa-lily	*Calochortus greenei*
Clustered lady's-slipper	*Cypripedium fasciculatum*
Detling's microseris	*Microseris laciniata* ssp. *detlingii*

(E) - Listed Endangered *(T) - Listed Threatened* *(CH) - Critical Habitat has been designated for this species*

(PE) - Proposed Endangered *(PT) - Proposed Threatened* *(PCH) - Critical Habitat has been proposed for this species*

Species of Concern - Taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

Printed on 100% chlorine free/60% post-consumer content paper

** *Consultation with National Marine Fisheries Service may be required.*

1/ *U. S. Department of Interior, Fish and Wildlife Service, October 31, 2000, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12*

2/ *Federal Register Vol. 60, No. 133, July 12, 1995 - Final Rule - Bald Eagle*

3/ *Federal Register Vol. 57, No. 10, January 15, 1992, Final Rule-Critical Habitat for the Northern Spotted Owl*

4/ *Federal Register Vol. 62, No. 87, May 6, 1997, Final Rule-Coho salmon*

5/ *Federal Register Vol. 64, No. 237, December 10 , 1999, Final Rule -Fritillaria gentneri*

6/ *Federal Register Vol. 66, No. 210, October 30, 2001, Notice of Review - Candidate or Proposed Animals and Plants*

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Lower Columbia Area Office
825 NE Multnomah Street, Suite 1110
Portland, Oregon 97232-2135

IN REPLY REFER TO:

LCA-6500
ENV-7.00

MAY - 1 2003

VIA FACSIMILE AND U.S. MAIL

MEMORANDUM

To: State Supervisor, U.S. Fish and Wildlife Service, Oregon State Office
2600 S.E. 98th Avenue, Suite 100, Portland, OR 97266
Attn: Kemper M. McMaster

From: Karen A. Blakney
ESA Program Manager

Subject: Request for Updated Threatened and Endangered Species List for Tyler Creek "Wasteway" Stabilization Project

On March 15, 2001 and again on October 22, 2001 the Bureau of Reclamation requested a list of threatened and endangered species occurring within our proposed Tyler Creek "Wasteway" Stabilization Project in Jackson County. We received your lists numbered 1-7-01-SP-403 and 1-7-02-SP-079 on April 18, 2001 and December 17, 2001, respectively.

We are nearing completion of our draft environmental assessment, prepared for National Environmental Policy Act (NEPA) Compliance. We request an updated Endangered Species Act (ESA) list for the following townships:

Jackson County, Oregon T39S: R3E S32-33
T40S: R3E S4-5

We would appreciate receiving the ESA species list at your earliest convenience. If you have questions regarding this NEPA review, please contact me at (503) 872-2798.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oregon Fish and Wildlife Office
2600 S.E. 98th Avenue, Suite 100
Portland, Oregon 97266
(503) 231-6179 FAX: (503) 231-6195

Reply To: 8330.03701(03)
File Name: Sp0370.wpd
TS Number: 03-3383

May 16, 2003

Karen Blakney
U.S. Bureau of Reclamation
825 NE Multnomah Street, Suite 1110
Portland, OR 97232-2135

Subject: Tyler Creek Wasteway Stabilization Project
USFWS Reference # (1-7-03-SP-0370)

Dear Ms. Blakney:

This is in response to your memorandum, dated May 1, 2003, requesting information on listed and proposed endangered and threatened species that may be present within the area of the Tyler Creek Wasteway Stabilization Project in Jackson County. The U.S. Fish and Wildlife Service (Service) received your correspondence on May 1, 2003.

We have attached a list (Attachment A) of threatened and endangered species that may occur within the area of the Tyler Creek Wasteway Stabilization Project. The list fulfills the requirement of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). U.S. Bureau of Reclamation (BR) requirements under the Act are outlined in Attachment B.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems on which they depend may be conserved. Under section 7(a)(1) and 7(a)(2) of the Act and pursuant to 50 CFR 402 *et seq.*, BR is required to utilize their authorities to carry out programs which further species conservation and to determine whether projects may affect threatened and endangered species, and/or critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) which are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (NEPA) (42 U.S.C. 4332 (2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to the Biological Assessment be prepared to determine whether they may affect listed and proposed species. Recommended contents of a Biological Assessment are described in Attachment B, as well as 50 CFR 402.12.

If BR determines, based on the Biological Assessment or evaluation, that threatened and endangered species and/or critical habitat may be affected by the project, BR is required to consult with the Service following the requirements of 50 CFR 402 which implement the Act.

Attachment A includes a list of candidate species under review for listing. The list reflects changes to the candidate species list published June 13, 2002, in the Federal Register (Vol. 67, No. 114, 40657) and the addition of "species of concern." Candidate species have no protection under the Act but are included for consideration as it is possible candidates could be listed prior to project completion. Species of concern are those taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

If a proposed project may affect only candidate species or species of concern, BR is not required to perform a Biological Assessment or evaluation or consult with the Service. However, the Service recommends addressing potential impacts to these species in order to prevent future conflicts. Therefore, if early evaluation of the project indicates that it is likely to adversely impact a candidate species or species of concern, BR may wish to request technical assistance from this office.

Your interest in endangered species is appreciated. The Service encourages BR to investigate opportunities for incorporating conservation of threatened and endangered species into project planning processes as a means of complying with the Act. If you have questions regarding your responsibilities under the Act, please contact Stacy Sroufe at (503) 231-6179. All correspondence should include the above referenced file number. For questions regarding salmon and steelhead trout, please contact National Marine Fisheries Service, 525 NE Oregon Street, Suite 500, Portland, Oregon 97232, (503) 230-5400.

Sincerely,

Stacy Rasmussen

for Kemper M. McMaster
State Supervisor

Attachments
1-7-03-SP-0370

cc: OFWO-ES
ODFW (nongame)

ATTACHMENT A

FEDERALLY LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES, CANDIDATE SPECIES AND SPECIES OF CONCERN THAT MAY OCCUR WITHIN THE AREA OF THE TYLER CREEK WASTEWAY STABILIZATION PROJECT
1-7-03-SP-0370

LISTED SPECIES[1/]		
Birds		
Bald eagle[2/]	*Haliaeetus leucocephalus*	T
Northern spotted owl[3/]	*Strix occidentalis caurina*	CH T
Plants		
Gentner mission-bells[4/]	*Fritillaria gentneri*	E
PROPOSED SPECIES		
None		
CANDIDATE SPECIES[5/]		
Amphibians and Reptiles		
Oregon spotted frog	*Rana pretiosa*	
Invertebrates		
Mardon skipper butterfly	*Polites mardon*	
Plants		
Siskiyou mariposa lily	*Calochortus persistens*	
SPECIES OF CONCERN		
Mammals		
Pallid bat	*Antrozous pallidus pacificus*	
Pacific western big-eared bat	*Corynorhinus (=Plecotus) townsendii townsendii*	
Silver-haired bat	*Lasionycteris noctivagans*	
Pacific fisher	*Martes pennanti pacifica*	
Long-eared myotis (bat)	*Myotis evotis*	
Fringed myotis (bat)	*Myotis thysanodes*	
Long-legged myotis (bat)	*Myotis volans*	
Yuma myotis (bat)	*Myotis yumanensis*	
Birds		
Northern goshawk	*Accipiter gentilis*	
Band-tailed pigeon	*Columba fasciata*	
Olive-sided flycatcher	*Contopus cooperi (=borealis)*	
Yellow-breasted chat	*Icteria virens*	
Acorn woodpecker	*Melanerpes formicivorous*	
Lewis' woodpecker	*Melanerpes lewis*	
Mountain quail	*Oreortyx pictus*	
White-headed woodpecker	*Picoides albolarvatus*	
Purple martin	*Progne subis*	

Amphibians and Reptiles	
Tailed frog	*Ascaphus truei*
Northwestern pond turtle	*Emys (=Clemmys) marmorata marmorata*
Common kingsnake	*Lampropeltis getula*
California mountain kingsnake	*Lampropeltis zonata*
Siskiyou Mountains salamander	*Plethodon stormi*
Northern red-legged frog	*Rana aurora aurora*
Foothill yellow-legged frog	*Rana boylii*
Cascades frog	*Rana cascadae*
Fish	
Coastal cutthroat trout (S. OR/CA Coasts)	*Oncorhynchus clarki clarki*
Invertebrates	
Denning's agapetus caddisfly	*Agapetus denningi*
Franklin's bumblebee	*Bombus franklini*
Siskiyou chloealtis grasshopper	*Chloealtis aspasma*
Green Springs Mountain farulan caddisfly	*Farula davisi*
Sagehen Creek goeracean caddisfly	*Goeracea oregona*
Schuh's homoplectran caddisfly	*Homoplectra schuhi*
caddisfly (no common name)	*Moselyana comosa*
Siskiyou gazelle beetle	*Nebria gebleri siskiyouensis*
Plants	
Clustered lady's-slipper	*Cypripedium fasciculatum*

(E) - Listed Endangered *(T) - Listed Threatened* *(CH) - Critical Habitat has been designated for this species*
(PE) - Proposed Endangered *(PT) - Proposed Threatened* *(PCH) - Critical Habitat has been proposed for this species*
(S) - Suspected *(D) - Documented*

Species of Concern - Taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

** *Consultation with National Marine Fisheries Service may be required.*

[1] *U. S. Department of Interior, Fish and Wildlife Service, October 31, 2000, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12*
[2] *Federal Register Vol. 60, No. 133, July 12, 1995 - Final Rule - Bald Eagle*
[3] *Federal Register Vol. 57, No. 10, January 15, 1992, Final Rule-Critical Habitat for the Northern Spotted Owl*
[4] *Federal Register Vol. 64, No. 237, December 10 , 1999, Final Rule -Fritillaria gentneri*
[5] *Federal Register Vol. 67, No. 114, June 13, 2002, Notice of Review - Candidate or Proposed Animals and Plants*

ATTACHMENT B

FEDERAL AGENCIES RESPONSIBILITIES UNDER SECTION 7(a) and (c)
OF THE ENDANGERED SPECIES ACT

SECTION 7(a)-Consultation/Conference

Requires:

1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;

2) Consultation with FWS when a Federal action may affect a listed endangered or threatened species to insure that any action authorized, funded or carried out by a Federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of Critical Habitat. The process is initiated by the Federal agency after they have determined if their action may affect (adversely or beneficially) a listed species; and

3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed Critical Habitat.

SECTION 7(c)-Biological Assessment for Major Construction Projects[1]

Requires Federal agencies or their designees to prepare a Biological Assessment (BA) for construction projects only. The purpose of the BA is to identify proposed and/or listed species which are/is likely to be affected by a construction project. The process is initiated by a Federal agency in requesting a list of proposed and listed threatened and endangered species (list attached). The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the species list, the accuracy of the species list should be informally verified with our Service. No irreversible commitment of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may be taken; however, no construction may begin.

To complete the BA, your agency or its designee should: (1) conduct an on-site inspection of the area to be affected by the proposal which may include a detailed survey of the area to determine if the species is present and whether suitable habitat exists for either expanding the existing population or for potential reintroduction of the species; (2) review literature and scientific data to determine species distribution, habitat needs, and other biological requirements; (3) interview experts including those within FWS, National Marine Fisheries Service, State conservation departments, universities, and others who may have data not yet published in scientific literature; (4) review and analyze the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; (5) analyze alternative actions that may provide conservation measures and (6) prepare a report documenting the results, including a discussion of study methods used, any problems encountered, and other relevant information. The BA should conclude whether or not a listed species will be affected. Upon completion, the report should be forwarded to our Portland Office.

---

[1] A construction project (or other undertaking having similar physical impacts) which is a major Federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332. (2)c). On projects other that construction, it is suggested that a biological evaluation similar to the biological assessment be undertaken to conserve species influenced by the Endangered Species Act.

Attachment B — National Historic Preservation Act Correspondence

- September 9, 2002, Reclamation's letter to Oregon State Historic Preservation Office and their October 17, 2002, concurrence

ENV
G

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
1150 North Curtis Road, Suite 100
Boise, Idaho 83706-1234

IN REPLY
REFER TO:

PN-6511
PRJ-26.00

SEP 0 9 2002

Dr. Leland Gilsen
Oregon State Historic Preservation Office
State Parks and Recreation Department
1115 Commercial Street NE, Suite 2
Salem OR 97301-1012

Subject: Test Excavations, Tyler Creek Wasteway Access Road Right-of-Way

Dear Dr. Gilsen:

In a letter dated May 4, 2001, the Bureau of Reclamation (Reclamation) notified you of our intention to develop an access to Tyler Creek Wasteway, and that three archeological sites (35JA492, JA493, and JA494) had been recorded within the access right-of-way (ROW). In May 2001, Reclamation awarded a test excavation contract to Heritage Research Associates (HRA). In June, 2002, HRA completed the test excavations, working under state permit AP-477. The testing methodology and results are described in the enclosed report entitled "Evaluation of Three Archaeological Sites in the Tyler Creek Wasteway Access Easement, Jackson County, Oregon."

As the sites are on private land, the test excavations were confined to the ROW corridor, which is a 60-foot wide easement. All of the following discussions about site eligibility address only the portion of each site lying within that easement ROW. All three of the sites extend beyond the ROW.

HRA has recommended that the portion of the three sites within the ROW be determined "not eligible" to the National Register of Historic Places. Reclamation agrees with that assessment. At site 35JA492, subsurface materials was largely confined to a very small area consistent with the surface artifact concentration, and all material was confined to the top 10 cm of soil. A projectile point mid-section was noted during survey, and was of a style commonly used during the last 2,200 years. No features were noted. Most all cultural materials found were unmodified flakes. The site appears to be a low-density surface artifact scatter with little potential to yield additional information. We ask that you concur that this site is not eligible.

Site 35JA493 is located on a small terrace, and may be the west edge of a larger site. Testing indicates that, at least within the ROW, the site is a rather sparse lithic scatter with most of the

material confined to the surface and top 20 cm of soil. Only lithic debitage and two square nails were found. The site appears to have been plowed in the past. The site deposits within the ROW appear to have little potential to yield significant information that would increase our understanding of prehistoric life in the area or region. The two square nails do not appear to be associated with an identifiable early historic period feature within the ROW. We ask that you concur that the portion of site 35JA493 located within Reclamation's ROW is not eligible to the National Register.

Concur

Site 35JA494 again appears to be a small section of what may be a larger site. Much more cultural material, extending to a greater depth, was found at this site. However, again the material was essentially limited to unmodified lithic debitage; 236 flakes were recovered, one core, one biface fragment, and one animal bone fragment. There was no evidence of features, either prehistoric or historic period in origin. Also, the site appears to be rather disturbed within the ROW. Mottled soils were interpreted to mean that some leveling or soil redistribution had occurred at the site. This interpretation is supported by discovery of a glass fragment between 10 and 20 cm below surface and a button between 30 and 40 cm below surface. Although material density indicates that this site may have significant deposits outside of the ROW, it appears that deposits within the ROW have limited physical integrity and lack the kind and variety of materials that could provide significant new information about area history or prehistory. We ask that you concur that the portion of site 35JA494 located within the ROW is not eligible to the National Register.

Concur

Reclamation will be using the ROW with only limited modifications. Principally, we must place a culvert in the creek crossing and do some amount of bank cutting to allow passage across Schoolhouse Creek. This will occur within the ROW immediately south of 35JA493. Although the test excavations indicate the site is not eligible within the ROW, Reclamation will monitor initial soil excavation at that location to ensure immediate detection in the unlikely event of discovery of potentially significant subsurface deposits that were not revealed during test excavations. We do not anticipate any construction in the ROW across 35JA494, other than sinking several post holes to allow installation of a gate at the road. If any construction occurs in the vicinity of 35JA492 it is likely to be limited additional leveling of the existing old road track through that area.

If you have questions, please call Lynne MacDonald at (208) 378-5316 or contact her via e-mail at lmacdonald@pn.usbr.gov. Thank you for your assistance.

Sincerely,

Kerry Whitford
Acting Manager, Ecosystems Analysis

Enclosure

Historic Preservation
Oregon State Parks & Recreation
1115 Commercial St. NE Ste #2

NOTED
L. GILSEN

Attachment C — Tribal Consultation

- September 9, 2002, Reclamation letter to the Confederated Tribes of the Grand Ronde Community of Oregon
- September 18, 2002, Reclamation letter to the Confederated Tribes of the Siletz Indians
- September 18, 2002, Reclamation letter to the Cow Creek Band of the Umpqua Tribe of Indians
- September 20, 2002, Reclamation letter to the Klamath Tribes
- October 28, 2002, letter from The Confederated Tribes of the Grand Ronde Community of Oregon

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
1150 North Curtis Road, Suite 100
Boise, Idaho 83706-1234

IN REPLY
REFER TO:

SEP 0 9 2002

PN-6511
PRJ-26.00

Ms. Connie Schultz
Cultural Protection Specialist
The Confederated Tribes of the
Grand Ronde Community of Oregon
9615 Grand Ronde Road
Grand Ronde OR 97347

Subject: Test Excavations, Tyler Creek Wasteway Access Road Right-of-Way

Dear Ms. Schultz:

The Bureau of Reclamation (Reclamation) operates Green Springs Powerplant, located about 8 miles southeast of Ashland, Oregon. When the plant is not in operation, the water that would otherwise have gone through the powerplant is diverted into a channel referred to as the Tyler Creek Wasteway. Several years ago, Reclamation purchased an easement across private lands to use as an access route to Tyler Creek Wasteway. Subsequently, three archeological sites (35JA492, JA493, and JA494) were recorded within the access Right-Of-Way (ROW). In May 2001, Reclamation awarded a contract to Heritage Research Associates (HRA) to complete test excavations at those three sites to determine if they were eligible to the National Register of Historic Places. Potentially interested tribes were informed of the proposed testing during the review period for the state permit. As part of the permit review process, you informed HRA that the Grand Ronde were interested in remaining informed about the testing outcome.

With this letter we would like to bring you up to date on actions since May. With this letter we also request your comment, pursuant to 36 CFR 800.4, on the eligibility of the sites to the National Register of Historic Places (Register).

In June, 2002, HRA completed the test excavations, working under state permit AP-477. The testing methodology and results are described in the enclosed report entitled "Evaluation of Three Archaeological Sites in the Tyler Creek Wasteway Access Easement, Jackson County, Oregon." As the sites are on private land, the test excavations were confined to the ROW corridor, which is a 60-foot wide easement. All discussions about site eligibility address only the portion of each site lying within that easement ROW. All three of the sites extend beyond the ROW.

Concurrent with this letter, on September 5, 2002, Reclamation initiated consultations with the State Historic Preservation Office (SHPO) about the eligibility of the three sites to the Register. HRA has recommended that the portion of the three sites within the ROW be determined "not eligible" to the Register. Reclamation agrees with that assessment. The basis for that assessment is outlined below.

At site 35JA492, subsurface materials were largely confined to a very small area consistent with the surface artifact concentration, and all material was confined to the top 10 cm of soil. A projectile point mid-section was noted during survey, and was of a style commonly used during the last 2,200 years. No features were noted. Most of the cultural material found was unmodified flakes. The site appears to be a low-density surface artifact scatter with little potential to yield additional information.

Site 35JA493 is located on a small terrace, and may be the west edge of a larger site. Testing indicates that, at least within the ROW, the site is a rather sparse lithic scatter with most of the material confined to the surface and top 20 cm of soil. Only lithic debitage and two square nails were found. The site appears to have been plowed in the past. The site deposits within the ROW appear to have little potential to yield significant information that would increase our understanding of prehistoric life in the area or region. The two square nails do not appear to be associated with an identifiable early historic period feature within the ROW.

Site 35JA494 again appears to be a small section of what may be a larger site. Much is more cultural material, extending to a greater depth, was found at this site. However, again the material was essentially limited to unmodified lithic debitage; 236 flakes were recovered, one core, one biface fragment, and one animal bone fragment. There was no evidence of features, either prehistoric or historic period in origin. Also, the site appears to be rather disturbed within the ROW. Mottled soils were interpreted to mean that some leveling or soil redistribution had occurred at the site. This interpretation is supported by discovery of a glass fragment between 10 and 20 cm below surface and a button between 30 and 40 cm below surface. Although material density indicates that this site may have significant deposits outside of the ROW, it appears that deposits within the ROW have limited physical integrity and lack the kind and variety of materials that could provide significant new information about area history or prehistory.

For your information, Reclamation will make only limited modifications to make the ROW usable as an access route. Principally, we must place a culvert at the creek crossing and do some amount of bank cutting to allow passage across Schoolhouse Creek. This will occur within the ROW immediately south of 35JA493. Although the test excavations indicate the site is not eligible within the ROW, Reclamation will monitor initial soil excavation at that location to ensure immediate detection in the unlikely event of discovery of potentially significant subsurface deposits that were not revealed during test excavations. We do not anticipate any construction in the ROW across 35JA494, other than sinking several post holes to allow installation of a gate at the road. If any construction occurs in the vicinity of 35JA492 it is likely to be limited additional leveling of the existing old road track through that area. We will drive

on the access road only under "fair weather" conditions; our easement agreement prohibits motorized access when the ground is soft. Therefore, we anticipate that our use of the access will not cause further damage to the landscape or the resources on that land.

If you have questions, please call Lynne MacDonald at (208) 378-5316 or contact her via e-mail at lmacdonald@pn.usbr.gov. Written comments can be addressed to Ms. MacDonald at the address on the letterhead. Thank you for your assistance.

Sincerely,

/s/ Kerry Whitford

Kerry Whitford
Acting Manager, Ecosystems Analysis

Enclosure

bc: PN-3248 (Green)
(w/o encl)

WBR:LMacDonald:ms:09-05-02:5316
h:\common\pn6500\lynne\Tyler tribal consult GR.wpd

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
1150 North Curtis Road, Suite 100
Boise, Idaho 83706-1234

IN REPLY
REFER TO:

PN-6511
PRJ-26.00

SEP 18 2002

Mr. Robert Kenta
Cultural Resources Manager
The Confederated Tribes of the
Siltez Indians
PO Box 549
Siletz OR 97380

Subject: Test Excavations, Tyler Creek Wasteway Access Road Right-of-Way

Dear Mr. Kenta:

The Bureau of Reclamation (Reclamation) operates Green Springs Powerplant, located about 8 miles southeast of Ashland, Oregon. When the plant is not in operation, the water that would otherwise have gone through the powerplant is diverted into a channel referred to as the Tyler Creek Wasteway. Several years ago, Reclamation purchased an easement across private lands to use as an access route to Tyler Creek Wasteway. Subsequently, three archeological sites (35JA492, JA493, and JA494) were recorded within the access Right-Of-Way (ROW). In May 2001, Reclamation awarded a contract to Heritage Research Associates (HRA) to complete test excavations at those three sites to determine if they were eligible to the National Register of Historic Places. Potentially interested tribes were informed of the proposed testing during the review period for the state permit. This included the Siltez Tribes.

With this letter we would like to bring you up to date on actions since May. With this letter we also invite you to comment, pursuant to 36 CFR 800.4, on the eligibility of the sites to the National Register of Historic Places (Register).

In June, 2002, HRA completed the test excavations, working under state permit AP-477. The testing methodology and results are described in the enclosed report entitled "Evaluation of Three Archaeological Sites in the Tyler Creek Wasteway Access Easement, Jackson County, Oregon." As the sites are on private land, the test excavations were confined to the ROW corridor, which is a 60-foot wide easement. All discussions about site eligibility address only the portion of each site lying within that easement ROW. All three of the sites extend beyond the ROW.

On September 9, 2002, Reclamation initiated consultations with the State Historic Preservation Office (SHPO) about the eligibility of the three sites to the Register. HRA has recommended that the portion of the three sites within the ROW be determined "not eligible" to the Register. Reclamation agrees with that assessment. The basis for that assessment is outlined below.

At site 35JA492, subsurface materials were largely confined to a very small area consistent with the surface artifact concentration, and all material was confined to the top 10 cm of soil. A projectile point mid-section was noted during survey, and was of a style commonly used during the last 2,200 years. No features were noted. Most of the cultural material found was unmodified flakes. The site appears to be a low-density surface artifact scatter with little potential to yield additional information.

Site 35JA493 is located on a small terrace, and may be the west edge of a larger site. Testing indicates that, at least within the ROW, the site is a rather sparse lithic scatter with most of the material confined to the surface and top 20 cm of soil. Only lithic debitage and two square nails were found. The site appears to have been plowed in the past. The site deposits within the ROW appear to have little potential to yield significant information that would increase our understanding of prehistoric life in the area or region. The two square nails do not appear to be associated with an identifiable early historic period feature within the ROW.

Site 35JA494 again appears to be a small section of what may be a larger site. Much more cultural material, extending to a greater depth, was found at this site. However, again the material was essentially limited to unmodified lithic debitage; 236 flakes were recovered, one core, one biface fragment, and one animal bone fragment. There was no evidence of features, either prehistoric or historic period in origin. Also, the site appears to be rather disturbed within the ROW. Mottled soils were interpreted to mean that some leveling or soil redistribution had occurred at the site. This interpretation is supported by discovery of a glass fragment between 10 and 20 cm below surface and a button between 30 and 40 cm below surface. Although material density indicates that this site may have significant deposits outside of the ROW, it appears that deposits within the ROW have limited physical integrity and lack the kind and variety of materials that could provide significant new information about area history or prehistory.

For your information, Reclamation will make only limited modifications to make the ROW usable as an access route. Principally, we must place a culvert at the creek crossing and do some amount of bank cutting to allow passage across Schoolhouse Creek. This will occur within the ROW immediately south of 35JA493. Although the test excavations indicate the site is not eligible within the ROW, Reclamation will monitor initial soil excavation at that location to ensure immediate detection in the unlikely event of discovery of potentially significant subsurface deposits that were not revealed during test excavations. We do not anticipate any construction in the ROW across 35JA494, other than sinking several post holes to allow installation of a gate at the road. If any construction occurs in the vicinity of 35JA492 it is likely to be limited additional leveling of the existing old road track through that area. We will drive on the access road only under "fair weather" conditions; our easement agreement prohibits

motorized access when the ground is soft. Therefore, we anticipate that our use of the access will not cause further damage to the landscape or the resources on that land.

If you have questions, please call Lynne MacDonald at (208) 378-5316 or contact her via e-mail at lmacdonald@pn.usbr.gov. Written comments can be addressed to Ms. MacDonald at the address on the letterhead. Thank you for your assistance.

Sincerely,

ACTING FOR

Kerry Whitford
Acting Manager, Ecosystems Analysis

Enclosure

bc: PN-3248 (Green)
(w/o encl)

WBR:LMacDonald:ms:09-17-02:5316
h:\common\pn6500\lynne\Tyler tribal consult siltez.wpd

returned 10/4 undelivered

SEP 18 2002

PN-6511
PRJ-26.00

Ms. Sherri Shaffer
Cultural Resource Manager
Cow Creek Band of the Umpqua
Tribe of Indians
2400 Stewart Parkway, Suite 300
Roseburg OR 97470

Subject: Test Excavations, Tyler Creek Wasteway Access Road Right-of-Way

Dear Ms. Shaffer:

The Bureau of Reclamation (Reclamation) operates Green Springs Powerplant, located about 8 miles southeast of Ashland, Oregon. When the plant is not in operation, the water that would otherwise have gone through the powerplant is diverted into a channel referred to as the Tyler Creek Wasteway. Several years ago, Reclamation purchased an easement across private lands to use as an access route to Tyler Creek Wasteway. Subsequently, three archeological sites (35JA492, JA493, and JA494) were recorded within the access Right-Of-Way (ROW). In May 2001, Reclamation awarded a contract to Heritage Research Associates (HRA) to complete test excavations at those three sites to determine if they were eligible to the National Register of Historic Places. Potentially interested tribes were informed of the proposed testing during the review period for the state permit. The Cow Creek Band were contacted at that time.

With this letter we would like to bring you up to date on actions since May. With this letter we also invite you to comment, pursuant to 36 CFR 800.4, on the eligibility of the sites to the National Register of Historic Places (Register).

In June, 2002, HRA completed the test excavations, working under state permit AP-477. The testing methodology and results are described in the enclosed report entitled "Evaluation of Three Archaeological Sites in the Tyler Creek Wasteway Access Easement, Jackson County, Oregon." As the sites are on private land, the test excavations were confined to the ROW corridor, which is a 60-foot wide easement. All discussions about site eligibility address only the portion of each site lying within that easement ROW. All three of the sites extend beyond the ROW.

On September 9, 2002, Reclamation initiated consultations with the State Historic Preservation Office (SHPO) about the eligibility of the three sites to the Register. HRA has recommended

HRA has recommended that the portion of the three sites within the ROW be determined "not eligible" to the Register. Reclamation agrees with that assessment. The basis for that assessment is outlined below.

At site 35JA492, subsurface materials were largely confined to a very small area consistent with the surface artifact concentration, and all material was confined to the top 10 cm of soil. A projectile point mid-section was noted during survey, and was of a style commonly used during the last 2,200 years. No features were noted. Most of the cultural material found was unmodified flakes. The site appears to be a low-density surface artifact scatter with little potential to yield additional information.

Site 35JA493 is located on a small terrace, and may be the west edge of a larger site. Testing indicates that, at least within the ROW, the site is a rather sparse lithic scatter with most of the material confined to the surface and top 20 cm of soil. Only lithic debitage and two square nails were found. The site appears to have been plowed in the past. The site deposits within the ROW appear to have little potential to yield significant information that would increase our understanding of prehistoric life in the area or region. The two square nails do not appear to be associated with an identifiable early historic period feature within the ROW.

Site 35JA494 again appears to be a small section of what may be a larger site. Much more cultural material, extending to a greater depth, was found at this site. However, again the material was essentially limited to unmodified lithic debitage; 236 flakes were recovered, one core, one biface fragment, and one animal bone fragment. There was no evidence of features, either prehistoric or historic period in origin. Also, the site appears to be rather disturbed within the ROW. Mottled soils were interpreted to mean that some leveling or soil redistribution had occurred at the site. This interpretation is supported by discovery of a glass fragment between 10 and 20 cm below surface and a button between 30 and 40 cm below surface. Although material density indicates that this site may have significant deposits outside of the ROW, it appears that deposits within the ROW have limited physical integrity and lack the kind and variety of materials that could provide significant new information about area history or prehistory.

For your information, Reclamation will make only limited modifications to make the ROW usable as an access route. Principally, we must place a culvert at the creek crossing and do some amount of bank cutting to allow passage across Schoolhouse Creek. This will occur within the ROW immediately south of 35JA493. Although the test excavations indicate the site is not eligible within the ROW, Reclamation will monitor initial soil excavation at that location to ensure immediate detection in the unlikely event of discovery of potentially significant subsurface deposits that were not revealed during test excavations. We do not anticipate any construction in the ROW across 35JA494, other than sinking several post holes to allow installation of a gate at the road. If any construction occurs in the vicinity of 35JA492 it is likely to be limited additional leveling of the existing old road track through that area. We will drive on the access road only under "fair weather" conditions; our easement agreement prohibits motorized access when the ground is soft. Therefore, we anticipate that our use of the access will not cause further damage to the landscape or the resources on that land.

If you have questions, please call Lynne MacDonald at (208) 378-5316 or contact her via e-mail at lmacdonald@pn.usbr.gov. Written comments can be addressed to Ms. MacDonald at the address on the letterhead. Thank you for your assistance.

Sincerely,

Steve Dunn

for Kerry Whitford
Acting Manager, Ecosystems Analysis

Enclosure

bc: PN-3248 (Green)
(w/o encl)

WBR:LMacDonald:ms:09-17-02:5316
h:\common\pn6500\lynne\Tyler tribal consult Cow Creek.wpd

SEP 2 0 2002

PN-6511
PRJ-26.00

Mr. Gerald Skelton
Cultural Resource Protection Specialist
The Klamath Tribes
PO Box 436
Chiloquin OR 97624

Subject: Test Excavations, Tyler Creek Wasteway Access Road Right-of-Way

Dear Mr. Skelton:

The Bureau of Reclamation (Reclamation) operates Green Springs Powerplant, located about 8 miles southeast of Ashland, Oregon. When the plant is not in operation, the water that would otherwise have gone through the powerplant is diverted into a channel referred to as the Tyler Creek Wasteway. Several years ago, Reclamation purchased an easement across private lands to use as an access route to Tyler Creek Wasteway. Subsequently, three archeological sites (35JA492, JA493, and JA494) were recorded within the access Right-Of-Way (ROW). In May 2001, Reclamation awarded a contract to Heritage Research Associates (HRA) to complete test excavations at those three sites to determine if they were eligible to the National Register of Historic Places. Potentially interested tribes were informed of the proposed testing during the review period for the state permit. The Klamath Tribes were contacted at that time.

With this letter we would like to bring you up to date on actions since May. With this letter we also invite you to comment, pursuant to 36 CFR 800.4, on the eligibility of the sites to the National Register of Historic Places (Register).

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eligible" to the Register. Reclamation agrees with that assessment. The basis for that assessment is outlined below.

At site 35JA492, subsurface materials were largely confined to a very small area consistent with the surface artifact concentration, and all material was confined to the top 10 cm of soil. A projectile point mid-section was noted during survey, and was of a style commonly used during the last 2,200 years. No features were noted. Most of the cultural material found was unmodified flakes. The site appears to be a low-density surface artifact scatter with little potential to yield additional information.

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If you have questions, please call Lynne MacDonald at (208) 378-5316 or contact her via e-mail at lmacdonald@pn.usbr.gov. Written comments can be addressed to Ms. MacDonald at the address on the letterhead. Thank you for your assistance.

Sincerely,

ACTING FOR David Zimmer

Kerry Whitford
Acting Manager, Ecosystems Analysis

Enclosure

bc: PN-3248 (Green)
(w/o encl)

WBR:LMacDonald:ms:09-17-02:5316
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LND 3(C)
CF

The Confederated Tribes of the Grand Ronde Community of Oregon

Cultural Resources
(503) 879-5211 • FAX (503) 879-2263
1-800-422-0232

9615 Grand Ronde Roa
Grand Ronde, Oregon 9734

Umpqua • Molalla • Rogue River • Kalapuya • Chasta

October 28, 2002

Lynne MacDonald
Bureau of Reclamation
Pacific Northwest Region
1150 North Curtis Road, Suite 100
Boise, ID 83706-1234

RE: Test Excavations, of Tyler Creek Wasteway Access Road Right-of-Way

Dear Ms. MacDonald:

The Cultural Resource Department has reviewed the report from Heritage Research Associates, No. 258, for the Tyler Creek Wasteway Access Road Right-of-Way.

It is noted that all three of the ROW sites are not recommended eligible for the NRHP due to the low density of artifacts, and previous soil disturbance. However, the Tribe considers these sites culturally significant, with a high possibility of an inadvertent discovery during any ground-disturbance.

The report from Heritage Research Associates does not indicate Tribal consultation in the event of an inadvertent discovery. However, should the project require any changes, or ground-disturbing activity not previously surveyed, or inadvertently discover cultural resources, the Tribe will request immediate notification. At such a time, the Tribe will reevaluate for inclusion in the NRHP.

If you have any questions, please contact me at 1-800-422-0232, ext. 2185.

Respectfully,

Connie Schultz,
Cultural Protection Specialist

Attachment D — Mail Distribution List

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SUE SHAFFER, CHAIRWOMAN
COW CREEK BAND OF UMPQUA TRIBE
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